

UNIVERSITY OF STIRLING

Japan, Iran, and the Oil Business:

A Case Study of Iran Japan Petrochemical Company

(IJPC)

Thesis Submitted for the

Degree of Doctor of Philosophy



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21 March 1994

ABSTRACT

The issue of Japan's heavy dependence on Middle Eastern oil has attracted a lot of attention in the political and academic circles for the reason that Japan is the second biggest consumer and the largest importer of oil in the world. Consequently, any action by Japan would not only have a major impact on petroleum markets, but also on international relations, security and on the Middle East itself.

In the late 1960s Japan began negotiations with Iran, her biggest oil supplier at that time, about the establishment of a petrochemical joint venture. These negotiations led to the creation of the Iran Japan Petrochemical Company (IJPC) in 1973.

This study examines the different reasons why the main partners, Mitsui Bussan of Japan and the National Petrochemical Company of Iran as well as their respective governments, were so interested in the idea of a joint venture. It traces the troubled history of IJPC from the preliminary negotiations in 1968, through two decades which saw the Iranian Revolution and the setting up of an Islamic state, the Iran-Iraq War, and two oil crises, until its dissolution in 1990.

The research reveals conflicts of interest between Japanese and Iranian motivations behind the venture, between the goals of the privately owned Mitsui Bussan and the state-run National Petrochemical Company as well as their contrasting organisational and managerial styles, which led to the failure of IJPC and its eventual dissolution.

Using the case of IJPC as an example, the study argues that the setting up of a joint venture of this nature was an inappropriate response to the main purposes of each nation, i.e. the Japanese desire for a stable oil supply and the Iranian desire for rapid industrialisation and transfer of technology. Finally, it suggests alternative policies through which each country could achieve its respective ambitions.

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INTRODUCTION

1.0- Objectives of the Study

This case study has four objectives. First, it attempts to analyse the reasons which led to the establishment of the Iran Japan Petrochemical Company (IJPC), the joint venture between Mitsui Bussan of Japan and the National Petrochemical Company (NPC) of Iran. In this regard, the emphasis of the study will be on the oil connection. It is widely believed that the heavy dependence of Japan on Middle Eastern and particularly Iranian oil in the 1960s, the unique make-up of the former's domestic oil industry and the weakness of Mitsui Bussan in the oil business, were the main factors behind the Japanese enthusiasm for a joint venture with Iran. The issue of Japan's heavy reliance on Middle Eastern oil has attracted a lot of attention in the West and in Japan itself. Many academics, politicians, bureaucrats and businessmen have addressed this issue from political, military and economic points of view and have made recommendations as to how Japan should reduce and/or stabilise her oil supplies from that volatile region. One specific action that Japanese governments and business leaders have taken has been to enter into joint ventures, especially in petrochemicals, with major oil producing countries such as Iran and Saudi Arabia in the hope that this would bring about a secure and steady flow of oil to Japan. So, two chapters will be devoted to this subject to analyse how and why Japan has become so dependent upon imported oil, particularly from the Middle East, to fuel her spectacular economic growth since the end of the Second World War. An attempt will also be made to examine the role that the oil connection played in the establishment of IJPC.

Iran's aspirations for industrial and economic development was another determining factor in the establishment of IJPC. Therefore, the political and economic

development of Iran in the 20th Century, and, in particular, the role of the domestic oil industry in that process, will be analysed so as to find the underlying assumptions which led the Iranian government into believing that entering into a petrochemical joint venture with the Japanese would help them in their endeavour for industrialisation and economic development.

The second objective of the study is to discover the causes of the failure of IJPC. This is especially important if one considers that the joint venture was Japan's single largest foreign investment in the 1970s and 1980s (even up to date) and was Iran's biggest and most important industrial project ever. The failure of the joint venture not only resulted in huge financial losses for both sides but also seriously thwarted Iran's industrialisation process which had been based upon the success of the project. Moreover, the failure of IJPC questioned the Japanese assumption that the establishment and success of such ventures with oil producing countries would automatically lead to more secure oil supplies. Hence, this study will try to uncover why the project failed and whether this led to less secure oil supplies from Iran.

The third objective is closely related to the above two in the sense that the study will try to examine whether it is logical or desirable for Japan to enter into joint ventures with oil producing countries in the hope that this will lead to a more secure supply of oil. This is especially important if one considers that such joint ventures are usually between private Japanese companies with profit maximisation motives and state owned companies in the Middle East which are mainly concerned with the long-term development of a particular industrial sector with all the conflicts of interests usually inherent in such associations. The study will try to explore other means for Japan to contribute to these countries' industrialisation efforts which would lead to their economic development and

stable oil supplies to Japan without the possibility of a conflict that an unsuccessful joint venture may engender.

The forth objective is to investigate whether it is appropriate for Iran to pour her rather limited financial, managerial and technical resources into huge industrial projects like IJPC for which she has to import most of the required inputs: capital, technology, and managerial skills without any effort to link such projects to other sectors of the economy.

2.0- Significance of the Study

Apart from a book by a Japanese journalist and news articles in various journals and magazines, no in-depth academic analysis on why IJPC was established and, more importantly, why it failed have been undertaken. It is hoped that this study, in a modest way, will contribute to the understanding of the subject and will initiate further studies into Japanese joint ventures in the Middle East. Moreover, it is the wish of the author of this study that a wide debate on the lessons that Iran can learn from Japanese management and organisational practices and experience in the formulation of a dynamic and appropriate industrial policy, be initiated within Iranian academic and official circles. It is hoped that the present research study will make a very small contribution to that debate.

2.1- In Terms of Japan's Policy Towards the Middle East

As mentioned above, the establishment of IJPC was directly connected to the issue of Japan's reliance on Middle Eastern oil in the sense that Japanese officials and top business leaders believed that entering into such ventures would lead to a secure supply of petroleum from that region. However, as this study will reveal, such linkages have little, if any, effect on the issue of secure oil supplies. In fact, in the likely event of failure, these connections could have an adverse affect on mutual relationships. Moreover, Middle Eastern countries put much less emphasis on such linkages than the Japanese tend to do. It is hoped that this study would demonstrate the irrelevance of this Japanese policy towards oil producing countries, particularly Iran, and would, in a very modest way, show how the former can assist the latter to develop economically and, in the process, bring about a more stable supply of oil to Japan.

2.2- In Terms of Iran's Economic and Industrial Policies

The IJPC project was to be the pinnacle of Iran's industrialisation plans in the 1970s. The Iranian government was hoping that the project would induce rapid industrialisation of the country with many downstream industries being established to process the outputs of the project. Moreover, the government wanted to use the project as a conduit for the transfer of technology and as a means of developing an export oriented petrochemical industry so that revenues generated by the sale of petochemical products would eventually reduce the country's heavy reliance on crude oil exports. However, as the forthcoming chapters will show, none of these plans and aspirations have materialised so far. The IJPC project, after consuming nearly \$5 billion of the country's scarce financial resources and after twenty years of construction has not yet

been completed. What's more, the concentration of most of the NPC's resources on a single project has caused a severe under-development of the Iranian petrochemical industry compared to other Middle Eastern oil producing countries.

It is hoped that the present study, by analysing the causes of IJPC's failure would, in a very small way, contribute to the current debate in Iran over the most appropriate course for the country to achieve industrialisation and economic development. The findings of this research are especially relevant when, at the present time, the Iranian government, after nearly 15 years, is once again promoting the development of heavy industry. Some of the plans under discussion involve foreign participation (like the joint venture with the Kobe Steel Company of Japan to produce iron and steel products for domestic and export markets on Qeshm Island). It is hoped that the findings of this study would shed some light on the problems associated with the building of large industrial projects in Iran and would contribute to the decision making process regarding such projects so as to reduce the risk of repeating the mistakes of the IJPC in the future.

Finally, as this study hopes to demonstrate, there are major difficulties associated with international joint ventures, particularly when they are between multinational corporations from industrialised countries and state owned companies of the developing world. These problems mainly arise from different organisational and managerial practices and conflicting expectations from such joint ventures. For multinationals, such ventures are only a part of their global business strategy which quite naturally, is concerned with profit maximisation. But for state owned companies these joint ventures are a conduit for the long-term development of a particular industry and as a means of economic development of their respective country. Obviously, such conflicts of interests and differing expectations are bound to affect the joint venture itself and cause friction

between the partners. This study is an attempt to illustrate the difficulties inherent in such associations and demonstrates that the finding of a suitable partner(s) is a very complex and intricate process, and companies, especially those from the developing countries, need to spend a lot of time and effort on finding an appropriate partner for their proposed joint venture. This point is very relevant as Iran once again is trying to attract foreign investment into the country and is encouraging the establishment of various joint ventures with foreign countries, specifically from the developed countries. Furthermore, it is hoped that this study will contribute to the understanding of international joint ventures in Iran and would act as a guide for future joint ventures in the country so as not to repeat the mistakes of IJPC once again.

3.0- Scope and Limitations of the Study

This study has been mainly confined to analysing the major factors behind the creation and failure of the Iran Japan Petrochemical Company. Due to space limitations, however, topics like Japanese industrial, environmental, foreign and trade policies, although directly relevant to the establishment of the joint venture, are not discussed in detail here. The study has instead concentrated on the Japanese oil industry and characteristics of trading companies (*sogo shosha*) as these two were deemed to be the most important factors on the Japanese side for the creation of IJPC.

On the Iranian side, the study has been limited to the role of the state, and the contribution of the domestic oil industry, in the economic development of Iran in the 20th Century. Organisational and managerial aspects of the National Iranian Oil Company and, in particular Islamic management, are also discussed in great detail. But subjects such as Iran's foreign and trade policies will not be examined here.

Particular attention has been paid to events leading to the formation and the construction of IJPC and the financial and managerial aspects of the company in the 1970s and 1980s. Furthermore, the effects of the 1979 Islamic Revolution and the eight year war between Iran and Iraq on the joint venture are examined in detail. This is because these two events, together with managerial and organisational factors, are thought to have played the main role in the dissolution of the joint venture.

The study has three major limitations. First, the review of the features of Japanese foreign investment has been limited to the period between the 1950s and the early 1970s. This is because the joint venture with Iran was created in the early 1970s and hence, was subject to the particular mode of Japanese investment in that period. Undoubtedly, the mode of Japanese foreign investment has gone through major changes in the 1970s and 1980s, but as these changes are thought to be irrelevant to IJPC, they have been excluded from the study.

Second, the so called Japanese style of management, although quite relevant to the study and, in the eyes of NPC officials, a main cause of the failure of the joint venture, will not be studied here. Moreover, no comprehensive comparison between Japanese and Iranian management styles will be presented. Instead, the characteristics of Japanese general trading companies which played a significant role in the creation of the company, and in the opinion of the author were a principal factor in creating conflicts between the partners and its failure, will be analysed at length.

Third, unfortunately, due to space limitations, it was not possible to present an in-depth comparison between IJPC and Japanese petrochemical joint ventures in other developing countries, especially the one between the Mitsubishi Group and Saudi Arabia. This would have made a very interesting analysis, especially in view of the fact that both

joint ventures were entered into for the same reasons (stable oil supply on the Japanese side and industrialisation on the Iranian and Saudi Part) and around the same time (1970s). However, IJPC became a spectacular failure but the joint venture with Saudi Arabia has been an outstanding success. It would make a very worthwhile subject for interested researchers to study why these two almost similar Japanese joint ventures in the Middle East have had such contrasting destinies.

Finally, future researchers may also be interested in carrying out a comparison between Japanese and Middle Eastern managerial and organisational characteristics and whether some aspects of Japanese management, which is said to be partly responsible for Japan's economic success, can be transferred to the Middle East whose managerial style is believed to be a major factor for the region's under-development.

4.0- The Structure and Contents of the Thesis

The thesis is organised into three parts and consists of nine chapters. Part One, which contains Chapters One to Six, is devoted to laying the background for the research and discussing the major factors responsible for the establishment of IJPC. Part Two, consisting of Chapter Seven, is the core chapter of the thesis and presents a very detailed analysis of the history of the joint venture from its formation to its liquidation. Part Three is the analysis and conclusion and includes Chapters Eight and Nine.

Chapter One sets-up the theoretical framework for the thesis within which the case study, the Iran Japan Petrochemical Company will be discussed. First, a brief review of theories of foreign investment will be presented. Then, a detailed analysis of theories of joint ventures will be given. Theories on the reasons for the creation of joint ventures and why some are successful and some not will be explored. In this section, the

framework for analysing IJPC will be established. Lastly, characteristics of Japanese foreign investment and theories on this subject will be discussed in length.

Chapter Two discusses the Japanese energy industries in the 20th Century. In particular, the Japanese government's oil policy and the effects of Occupation policies on the Japanese oil industry and the factors which caused Japan to become heavily dependent upon imported oil will be examined in detail.

Chapter Three addresses Japan's economic and political relations with the Middle East in the 20th Century. Particular attention will be paid to the oil connection and how the former became reliant upon the latter for most of her petroleum imports, especially on Iranian oil in the 1960s. After a quick review of Japanese foreign investments, her investments in Iran will be discussed in detail.

Chapter Four analyses the economic and political developments in 20th Century Iran. Specifically, the role of the state in the industrialisation process, the evolution of the domestic oil industry, its contribution to the economic development of Iran and its linkages to other sectors of the domestic economy will be studied at length. Finally, the factors which are believed to have prompted the Iranian government's decision to choose the domestic petrochemical industry for expansion are discussed.

Chapter Five traces the historical evolution of Mitsui Bussan, the main Japanese partner in the joint venture with Iran. The creation of pre-war business groups (*zaibatsu*) in Japan, the effects of Occupation policies on them and their dissolution, in particular that of Mitsui Bussan will be discussed. Then the emergence of post-war industrial groupings (*keiretsu*), the re-grouping of the Mitsui Group and the re-merger of Mitsui Bussan (now also called Mitsui & Co.) will be discussed. Also, the roles and functions of Japanese trading companies (*sogo shosha*) will be analysed. Finally, the managerial

and organisational style of the Mitsui Group and in particular Mitsui Bussan as compared to the Mitsubishi Group and Mitsubishi Trading Corporation respectively, and the reasons for the weakness of Mitsui Bussan in the oil business will be extensively discussed. The last point is particularly relevant to our study as it is believed to be a major factor behind Mitsui Bussan's enthusiasm for the petrochemical joint venture with Iran.

Chapter Six discusses the aspects and the evolution of the Iranian management style. First, the role of the bazaari merchant in the industrialisation of Iran and their style of management will be addressed. The influence of foreign management styles on Iranian management will be analysed. Then, the attributes of Islamic management and its applicability to modern organisations will be discussed. Finally, the chapter will examine the organisational and managerial characteristics of the National Iranian Oil Company.

Chapter Seven is the core chapter of the thesis where the history of the Iran Japan Petrochemical Company, from exploratory talks in the late 1960s to its dissolution in 1990 will be discussed. First, the chapter will review the motivations, both on the Japanese and Iranian sides, which favoured the establishment of a petrochemical joint venture. Next, the events leading to the formation of the Iran Japan Petrochemical Company, plus the factors affecting the construction of the project together with managerial, organisational and financial aspects of IJPC, will be discussed in great detail. The influences of the two oil crises in the 1970s, the Iranian Revolution, and the Iran Iraq War on the fortunes of the joint ventures will also be examined. Finally, the factors which led to the dissolution of IJPC will be analysed.

Chapter Eight discusses the main characteristics of the petrochemical industry

from an economic point of view. Then, based on this analysis and the findings of previous chapters, the causes of the failure of the joint venture are discussed. The chapter will argue that due to various factors, namely, incompatibility of the expectations of the partners from the joint venture and their organisational and managerial styles (private versus state), inappropriate choice of location for the project, changes in the oil markets, cost over-runs and, more importantly, the failure of the joint venture to fulfill the goals set for it by its parents and changes in the strategy of the latter were the main determining factors in the failure of IJPC.

Chapter Nine considers the lessons that Japan, Iran, Mitsui Bussan, and the National Petrochemical Company of Iran can learn from the failure of IJPC. It argues that it is more pertinent for Japan to contribute to the overall economic development of oil producing countries such as Iran than entering into risky joint ventures if she wants to secure a stable supply of oil from the latter.

The chapter also contends that considering the under-developed state of the Iranian economy, undertaking huge industrial projects such as IJPC are wholly unsuitable for the country. This is especially so as these projects do not draw from the the country's existing resources, relying instead for most of their inputs on imports. Also, they fail to establish any backward or forward linkages with the rest of the domestic economy. Furthermore, the case for a dynamic industrial policy that promotes the types of industries which by establishing links with those sectors of the Iranian economy that have a comparative advantage, can produce competitive goods for the domestic and regional markets is argued. The chapter argues that with respect to the failure of IJPC and the Iranian government's plans to introduce private capital into the domestic petrochemical industry, the organisation of the National Petrochemical Company needs a radical shake-

up. Various alternatives for such an organisational changes are put forward.

Finally, the factors that multinational corporations and state owned companies from the developing world need to consider before establishing a joint venture are discussed.

It is hoped that this thesis makes a small contribution to the understanding of Japan's oil policy, Iran's industrialisation plans and International joint ventures.

PART ONE

CHAPTER ONE

THE THEORETICAL FRAMEWORK

1.0- Introduction

In this chapter the theoretical framework for analysing the case study, Iran Japan Petrochemical Company, will be established. First, the motives, benefits, and problems of foreign investment will be studied. Then, joint ventures as a form of foreign investment will be discussed at length. Finally, the attributes of Japanese foreign investment will be analyzed.

2.0- Theories of Foreign Investment

2.1- What is Foreign Investment

If a citizen of one country makes an investment in another country with the intention of actively managing the physical assets and organisation acquired or created as a result of that investment, the investment is commonly termed a *foreign direct investment* [FDI]. If, by contrast, the foreign investment is such that the investor intends only to hold the investment with the expectation of financial gain and does not intend to manage the investment, it is termed a *foreign portfolio investment*, or simply a portfolio investment.¹

Direct foreign investment can also be termed as the offering of a package to a foreign country consisting of capital, technology, managerial skills, organisational capabilities, and markets.

Charles Oman (1984) divides various forms of foreign investments into two groups: traditional or enclave foreign direct investment, and "new forms of international investments". The former involves wholly or majority owned subsidiaries in a foreign

country, and the latter includes joint ventures, licensing agreements, franchising, management contracts, turnkey contracts, product-in-hand, production sharing contracts, risk service contracts and international sub-contracting.² Furthermore, There are three types of foreign investment; horizontal expansion (producing the same product as in the domestic market), vertical expansion (adding a stage in the production process that comes before or is subsequent to the firm's principal processing activity), or conglomerate expansion (producing different goods from those for the domestic market).³

2.2- Causes of Foreign Investment

Usually, the motives for foreign direct investment are classified into resource oriented, labour oriented, and market oriented investment (which is sub-divided into trade barriers induced foreign investment and oligopolistic foreign direct investment).⁴

Generally speaking, theories explaining the causes of foreign investment are classified into four groups; strictly economic theories, strictly subjective theories, dynamic theories of foreign direct investment, and generalised theories.

(1) Strictly Economic Theories: These theories argue that economic factors are the only causes of foreign direct investment. The most widely recognised of these is the 'specific-advantage' hypothesis which proposes that the cause of foreign direct investment is some firm specific-advantage that the multinational companies possess which provide them with a lead over host-country producers. These advantages could include a technologically superior product or process, managerial skills, multi-plant economies, internal financial resources, and so on. The most famous of these theories is the Hymer theory of foreign direct investment.⁵ Hymer states that foreign direct investment takes

place mainly in oligopolistic industries, and at least some of the firms in these industries possess advantages which enable them to overcome the cost disadvantages associated with operating internationally. According to Hymer, these advantages include economies of scale or some sort of "superior" proprietary knowledge

(2) Strictly Subjective Theories: These theories maintain that the behavioural factors influencing the preferences of the managers of a firm can explain the decision to invest abroad.

(3) Dynamic Theories of Foreign Direct Investment: These theories advocate that foreign direct investment is a dynamic process whose pattern changes with time. The most important of these is Raymond Vernon's theory of 'product-life-cycle', a concept which he has borrowed from marketing. According to this theory, exporting and foreign investment are separate stages in the life-time of a product or process by which multinational firms expand into foreign markets. More precisely, foreign investment succeeds foreign trade which is undertaken to protect the share gained in a foreign market by exports. Moreover, the theory adds that this process is inevitable in the life-cycle of a product or process and cannot be reversed.⁶

(3) Generalised Theories: These theories combine the above three theories to explain the foreign investment decision by multinational firms. These theories state that neither economic nor behavioural factors can explain the causes of foreign direct investment on their own and, although they accept that foreign investment does follow exports as advocated by the 'product-life-cycle' hypothesis, they maintain that this theory lacks the generality required. The most important of these theories is Richardson's Generalised Model of Foreign Direct Investment.⁷

2.2.1- Causes of Horizontal Foreign Investment

Several hypotheses have been put forward to explain why corporations undertake horizontal investments abroad, the most important of which are mentioned below:

(i) the Specific Advantage Hypothesis,⁸ (ii) the Capital Abundance Hypothesis,⁹ (iii) the Research and Development Hypothesis,¹⁰ (iv) the Barriers to Entry Hypothesis,¹¹ (v) the Tariff Hypothesis,¹² (vi) the Lower Production Costs Hypothesis (several researchers however, have shown that actual average production cost is a minor motivation to invest in a foreign market, and argue that the existence of low-cost investment opportunities is not a sufficient condition for investing abroad.¹³), (vii) the Foreign Government Inducements Hypothesis (such as tax differentials and incentives, depreciation allowances, favourable interest rates and credit conditions)¹⁴, (viii) the Multinational Fad Hypothesis¹⁵, (ix) Vernon's Product-Life-Cycle Hypothesis¹⁶, and (x) Richardson's Generalised Model of Foreign Direct Investment¹⁷

2.2.2- Causes of Vertical Foreign Investment

Vertical investment in a foreign country is primarily undertaken for the production of a raw material. Firms integrate backward by investing in the exploration, development, and production (downstream) of raw materials in resource rich foreign countries. The raw material is then shipped back to the home country (off-shore sourcing) or third country for processing into intermediate and consumer products.

There are various motives which induce a firm to undertake foreign direct investment in different stages of the same production process, the most important of which are outlined below:¹⁸

(i) Realisation of Multi-Plant Economies,

- ii) Security of Supplies of Raw Materials located in Less Developed Countries,
- (iii) Avoidance of Oligopolistic Uncertainty,
- (iv) Avoidance of Business Risk,
- (v) Increase in Market Power,
- (vi) Increase in Entry Barriers,

It is clear that the above factors are purely economic considerations. However, subjective factors do affect the decision to invest in a foreign country in order to realise vertical integration (these subjective factors, as shall be argued in later chapters may have played a role in the establishment of LJPC).

2.3- Characteristics of Multinationals

Many researchers of multinationals believe that companies which undertake foreign investment (become multinationals) have the following characteristics:

(i) Foreign investment originates from industries which have a differentiated oligopolistic nature in their home markets and direct their foreign investment to markets which are also oligopolistic with product differentiation.¹⁹

(ii) Multinational corporations are large in size and have exhausted all possible sources of economies of scale in the home market. They would not undertake foreign investment if profitable opportunities existed for the exploitation of economies of scale in production or sales in the home market.

(iii) Multinationals tend to enter foreign oligopolistic markets which are protected by strong barriers to entry. However, multinational firms have advantages against each of the major sources of entry barriers. The most important of these advantages are (1)

product or process differentiation, (2) the ability of the multinational firm to achieve or exceed the minimum optimal scale of plant in a foreign market, (3) easier access to large sources of finance both from retained earnings and international capital markets, and (4) multinationals have significant absolute cost advantages over local foreign competitors which arise mainly from lower cost of finance, superior technology, and more efficient and skilled managerial personnel.

(iv) The above advantages should, however, be appraised against the disadvantages related to operating in a foreign market. These disadvantages are (1) additional costs of gathering information, (2) exchange rate fluctuations, and (3) political actions by foreign governments. The above mentioned factors, therefore, make foreign investment more risky than investment in the home country.

(v) The greater risk of foreign investment can be borne by large firms which partly explains the large of multinational corporations.

(vi) Due to these additional risks, multinationals require a higher rate of return on their foreign investment to compensate them for undertaking such risky ventures abroad.

2.4- The Economic Effects of Foreign Direct Investment

As mentioned earlier, foreign direct investment offers the host country a package consisting of capital, managerial skills, technological know-how, organisational skills, and market opportunities (in the investor's home country and third countries). To the extent that various elements of this package are scarce or lacking in the host country, they stimulate employment, output and economic growth. Moreover, foreign investment provides capital for countries short of funds with the necessary foreign exchange for

imports and investment (this is particularly true of developing countries whose main source of foreign exchange is earnings from foreign investment i.e. vertical expansion) in the development of their natural resources. (See Chapter 4 for the case of Iran).

Foreign direct investment is said to have micro as well as macro-economic effects on the host country although the degree of such benefits is fiercely debated between proponents and opponents of foreign investment.²⁰ The main benefits of foreign investment to the host country can be summarised as below:²¹

- (i) The revenue from the taxation of profits of the foreign subsidiaries,
 - (ii) Improvement in skills of the labour force of the host country.
 - (iii) Increase in the productivity of factors of production in general,
 - (iv) Improvement in the allocation of resources of the host country from the increase competition and the ensuing pressure on the prices of commodities,
 - (v) Speeding-up of the adaptation of technological progress.
- The economic effects of horizontal and vertical types of foreign investments are in general similar, although the latter's impact is smaller than the former's. For instance, extractive subsidiaries are capital intensive and hence, offer fewer opportunities for training and skill improvement of the local workforce. Furthermore, these types of industries do not establish strong backward linkages (see Chapter 4 for definition) with the domestic industry of the host country, and they buy few local outputs. Moreover, if the foreign subsidiary limits its operations to extraction of natural resources only and carries out all of the processing in its home country, no forward linkages (see Chapter 4) will develop with the rest of the economy of the host country, therefore, impeding the process of industrialisation.

2.5- Problems Created by Foreign Investment

Foreign investment as well as having the above mentioned economic benefits (although the real value of such benefits is disputed) creates various problems for a developing country. These problems can be classified into five categories as follows:²²

(i) Dependencia Theorem: By accepting foreign private investments from the developed nations, less developed countries increase their technological and cultural dependency.

(ii) Alliance with Local Elite in Power: Multinationals tie up politically and economically with the ruling group in the host country. By helping these forces to maintain the status quo, multinational firms impede political and social change.

(iii) Corrupting Influence: Multinational corporations are accused of failing in their social and economic responsibilities. These accusations include the introduction of alien cultural values, and the distortion of the demand for workers and professional staff by offering higher salaries, thereby, limiting local firms' ability to employ skilled people, which in turn causes their underdevelopment as compared with multinationals. Multinationals are also accused of excluding their local employees from the key decision making process of their subsidiaries, and moreover, frustrating the able local managers' ambitions to occupy top positions in the subsidiary as well as in the regional and parent headquarters. Furthermore, tax evasions and transfer pricing by multinationals deprive the developing countries of adequate tax revenues and put extra strain on their foreign exchange reserves.

(iv) Reliance on Home Countries: Whenever a dispute develops between the multinationals and the host governments of developing countries, the former seek the assistance of their home governments in the form of diplomatic pressure on the host country. So the acceptance of foreign direct investment tends to bring some degree of

political dependence on foreign governments.

(v) Extra-Territoriality: Even when multinational corporations do not seek diplomatic assistance from their home governments, the latter use the former in order to intervene in their foreign trade and in the investments of their subsidiaries abroad. Therefore, the home governments (mainly Western industrialised countries) use the multinationals to interfere in the domestic affairs of the developing countries.

Considering these disadvantages associated with multinationals, why do developing countries not only tolerate but actively encourage foreign investment? The answer lies in their ambitions to catch up with the technologically and economically advanced countries of the West, but they lack some or all of the necessary ingredients for industrialisation and economic development. These factors as mentioned before are; capital, technology, managerial skills, organisational abilities and access to export markets. The developing countries believe that by inviting foreign investment they will acquire the necessary inputs for industrialisation.

Hence, these countries expect multinationals to fulfil diverse public goals for them, like creating employment, economic growth, industrialisation and so on. On the other hand, multinationals are private firms whose only aim is making profits for their shareholders. They make foreign investments in order to expand their market shares and achieve economies of scale, and rarely, if ever, are they prepared to fulfil the public goals of the developing countries at the expense of their own private profits. This irreconcilable discrepancy between the public and private goals more often than not results in misunderstandings and conflicts between the two sides.

However, if multinational managers, before making a decision on foreign investment, endeavour to comprehend the industrialisation goals, as well as the historical,

social, cultural, and political factors influencing these goals, they may reach a more objective decision regarding their investment in that country, and avoid potential future friction with the host government. Perhaps, the most important consideration should be the type of industry suitable for transplantation by foreign direct investment to the developing country which is compatible with its stage of economic development, taking into account all comparative costs (construction, labour, raw material, etc).

3.0- Joint Venture as a form of Foreign Investment

As noted in the beginning of this chapter, there are two forms of foreign investment, traditional or enclave (wholly or majority owned subsidiaries) and "new forms" such as joint ventures. Moreover, an ownership share of 10-20 percent is generally used as the dividing line between direct and portfolio investment in the literature on foreign direct investment.²³ As the Japanese investment in Iran (IJPC) was in the form of a joint venture, the next section will only discuss this form of foreign investment.²⁴

3.1- Definition of Joint Ventures

Joint ventures, in the sense in which the term is understood in the business today, are largely a development of the period since the Second World War.²⁵ The first book which appears to deal systematically with what is now described as a joint venture is an English one by A.H. Boulton²⁶ and does not use the term joint venture at all. The term 'consortium' is still widely used, particularly in the banking world.²⁷

Young and Bradford define a joint venture as an "enterprise, or corporation or partnership formed by two or more companies, individuals or organisations at least one of which is an operating entity which wishes to broaden its activities for the purpose of

conducting a new profit-motivated business of permanent duration. In general the ownership is shared by the participants with more or less equal distribution and without absolute dominance by one party".²⁸

Otterbeck²⁹ defines joint ventures as those affiliates where the parent has at least some management control but where there is also one partner or more who also has an important share of the ownership of the affiliate. A joint venture, therefore, is a company where each of the two or more firms has a non-marginal equity position and where at least two parties in some way share the responsibility for managing the joint venture. He further adds that a joint venture may be designed for a specific task or to fulfil a longer-term role in the strategy of the founding firms.

Boyle³⁰ describes a joint venture as the creation of a new organisational entity by two or more partner organisations. In his terminology, the creating organisations are referred to as the parents, and the created joint venture as the progeny.

Pfeffer and Nowak³¹ state that the joint venture concept involves the creation of a new, separate, organisational entity, jointly owned and controlled by the parent organisations. This new entity can incur debt, sign contracts, or undertake other activities in its own name, and without consequence to the financial or legal position of the parents, except to the extent of their investment in the joint venture.

Edstrom and Hogberg³² argue that a joint venture is one form of inter-organisational co-operation. They distinguish three forms of such co-operation: contracts, joint programmes and joint ventures. They define joint venture as a separate organisational unit which is jointly owned and controlled by the co-operating firms.

It can therefore be inferred from the above that a joint venture must be controlled jointly by its parents and not by one party alone, though management may be and often

is entrusted to one of them. The share of any one participant is of secondary importance. What is crucial is the degree of effective control exercised by one of the parents over the joint venture.

3.2- Classification of Joint Ventures

Generally, joint ventures are classified in four different ways.³³

First, they may be related to a single project or a group of related projects or they may be setting up business on a permanent basis.

Secondly, a joint venture can be classified by the nature of the participants and their relationship to one another outside the joint venture itself. In many cases, especially in developing countries, one of the participants is a business concern, usually a large multinational from the industrialised countries, and the other is the government of the host country or one of its agencies. In other cases, multinational companies for various reasons, like sharing research and development costs or restricting competition, etc, may establish a joint venture in the home country of one or both parents or in a third country.

Thirdly, joint ventures can be classified by the way they are intended to operate. Some may cover the complete business cycle in their field of operation or they may be restricted to one or more aspects of a larger business cycle such as R & D, production, sales, etc.

Fourthly, joint ventures are classified according to the country of their domicile. Some are established in the country of their parents (i.e. both parents operate in the same country) while others are international in the sense that they are set up in the country of one of their participants or in a third one.

3.3- The Causes of Joint Venture

The wholly owned affiliate, for many years, was regarded as the normal form of foreign investment by American multinationals (which carried out most of these investments). However, during the 1950s and 1960s, under strong pressure from the host governments, especially in the developing countries who restricted ownership of assets by foreign corporations, and due to other extraordinary circumstances³⁴, multinationals began to use other forms of foreign investment. Moreover, larger scale of operations, and risk-spreading through sharing of technological, commercial, or financial risk are mentioned as reasons why firms enter into various forms of co-operation with other firms.

Berg and Friedman³⁵ state that most joint ventures are born out of sets of unique circumstances. They also add that joint ventures represent an organisational form for achieving economic objectives neither parent could normally attain alone. In fact, most large corporations will, except where the aim is restriction of competition, prefer a viable alternative (like a wholly owned subsidiary) to a joint venture.

Edstrom et al (1979) have developed a theory called the "resources dependence model". This model assumes that resources are scarce, and a firm's survival depends on its ability to acquire such scarce resources. It has to compete with other firms which are dependent on the same resource (horizontal interdependence), and it also has to negotiate with firms which control the allocation, access, or use of a scarce resource (vertical interdependence). Interdependence creates uncertainty, and firms seek to avoid or reduce such uncertainty. The model espouses that one way of reducing uncertainty is to negotiate some form of co-operation.³⁶

Pfeffer and Nowak (1976) argue that resource inter-dependence, not resource

scarcity, explains the creation of joint ventures. Their theory advocates that exchange of resources between and within industries create inter-organisational interdependence, and a new organisational entity (a joint venture) is formed to manage such interdependence. According to Pfeffer and Nowak, two types of organisational interdependence exist: competitive interdependence (horizontal) and symbiotic interdependence (vertical).³⁷ The former type occurs "only in organisations operating in the same industry which are functionally equivalent, in that they are attempting to produce similar products and services for similar markets" and, hence, compete with one another for the same resources and markets.³⁸ Such organisations, especially the business organisations, do not like to face unrestrained competition and the uncertainty that results from such competition and, hence, seek to establish negotiated environments. Joint ventures (as well as formation of cartels) between these organisations is one way of creating a stable position in the environment.

Symbiotic interdependence which is defined as "a mutual dependence between unlike organisations"³⁹, arises between industries which are dependent on one another for the procurement of their inputs and disposal of their outputs. For example, steel producers need iron and coal and petrochemical plants need natural gas both as a raw material and source of energy. These businesses also need marketing outlets to dispose of their products. Such interdependencies which often cross national boundaries produce uncertainty which, as noted earlier, is disliked by business organisations. These organisations attempt to reduce these uncertainties by integrating backward or forward, and creation of joint ventures is one way of achieving such integrations.

While joint ventures are, arguably, the primary organisational responses to the two above types of organisational interdependence, there exist other explanations for joint

venture activities, the most common of which state that joint ventures are organised to (1) spread the risks of new industrial developments, (2) establish joint or combined facilities for greater economy, (3) accumulate large amounts of needed capital, and (4) undertake programmes that are too expensive for individual companies to handle.⁴⁰

In their study of 163 joint ventures entered into between 1960 and 1971, Pfeffer and Nowak find that the general advantage of reducing uncertainty by entering into joint ventures is a very strong factor in the creation of such new organisations. They also find evidence for their hypothesis that technological intensity in an industry is strongly correlated with transaction interdependence.⁴¹ Therefore, technological intensity could be added to organisational (or resource) interdependence as a reason why firms enter into joint ventures.

Bivens and Lovell (1966) expound that the purpose of a joint venture is to put together complementary resources of already existing firms.⁴² Furthermore, many researchers⁴³ argue that multinational corporations and local firms of foreign countries, by matching their resources, can:

- (1) Reduce the financial risk of operating in a foreign country,
- (2) Obtain local personal contacts on a committed basis,
- (3) Obtain marketing channels or skills,
- (4) Obtain an assured outlet for, or an assured source of, raw materials available only from an oligopolistic industry,
- (5) Obtain access to local cost, market, or technological information.⁴⁴

3.4- Joint Venture Management

Studies of joint ventures by management oriented researchers have typically been concerned with the trade off between the need for unilateral control and the need for

resources. When the latter dominates, joint ventures may be considered. Wells⁴⁵ found that multinational firms enter into joint ventures principally for three reasons:

- (1) Need for local marketing know-how,
- (2) Need to extend a vertically integrated structure,
- (3) Need for resources.

It is difficult to argue that joint venture management is easy.⁴⁶ They are expected to be difficult to manage. Entities internal to the firm can be managed with the help of formal systems, structures, budgeting processes, norms, traditions, values, sanctions and rewards that have been built up or have evolved during the history of a company. A joint venture on the other hand, is not under the control of a single management. It may show a mixture of the parent company's culture and that of the host country. In joint ventures two or more companies commit people and resources to something which will become part of and be influenced by both parents' culture, systems, career paths, norms, etc., as well as to some extent being an outside supplier, customer, or even competitor. One should expect to encounter problems in an international joint venture because of cultural differences inherent in any business activity in which more than one country is involved.⁴⁷

3.5- Joint Venture Stability

Lawrence G. Franko (1971) has made a comprehensive study of causes of instability of joint ventures. His aim was to determine whether a joint venture was *stable* or not, *stability* being interpreted as whether a joint venture remained a joint venture or a fundamental shift occurred in the relationship between the parent companies. This shift is indicated by the break-up of the relationship, either by one of the parents taking over

the joint venture, or by dissolving the joint venture, or selling it to a third party.

The principal argument of Franko is that the major cause of a joint venture's instability is a change in the business strategy of its parent companies.⁴⁸ This change occurs as a result of a multinational's choosing a strategy of either product diversification or product concentration. Firms that base their competitive strengths on the development of new products for many different overseas end-use markets appear to have a high degree of tolerance for joint ventures.⁴⁹ Firms that have a monopolistic control over natural resources and that sell products made from such resources also appear to be highly tolerant of manufacturing joint ventures with foreign partners.

However, firms that constrain their foreign activities to a particular product, or more precisely, choose to constrain themselves to serving a particular customer-group, tend to purge themselves of joint venture partners after a time. Such firms find it necessary to increase demand and to grow by cutting prices (and hence costs) or by recapturing an escaping monopolistic position by increasing sales expenses. Multinational cost-cutting usually involves the elimination of competing production facilities (like joint ventures with foreign partners), or centralising marketing decision-making.⁵⁰

Franko's study research seems to indicate that a number of factors are relatively unrelated to a multinational firm's motivation to change the ownership position in joint ventures. These factors include cultural differences between partners, whether or not products produced by joint ventures were sold to consumers or producers, tradeability characteristics of the products which a joint venture produces, the importance of financial and other conflicts with joint venture partners, and the profitability of the firm's foreign operations.⁵¹

It can be argued that stability of joint ventures is not necessarily a good criterion

for success.⁵² A joint venture may not have been set up because the parents thought it was important or good to have a joint venture, but rather to fulfil a mission. It is possible that a joint venture that becomes unstable is very successful in the eyes of one or both of the parents.⁵³ Although this point is not made by Franko, he nevertheless argues against focusing on conflict in joint ventures. Franko states that conflict is not a cause for instability in joint ventures; the important point is whether or not the joint venture fits into the strategy of the parents.

In order to understand why some joint ventures are successful and some are not, one must look into the strategy of the parent firms, the reasons for entering into the joint venture in the first place and the firms' organisational characteristics as well as their industries.⁵⁴ Success cannot be measured in terms of stability since the purpose of a joint venture is not to last, but rather to contribute to the fulfilment of the goals of its parents. Therefore, one must look carefully into what actually goes on in the process of managing the joint venture.⁵⁵

3.6- Advantages of Joint Ventures⁵⁶

The advantages associated with joint ventures can be divided into negative and positive ones. Generally, such advantages are divided into the following four categories:

(1)- Limitation of Investment: This is regarded as a negative advantage of joint ventures in the sense that when the investment is made in a country with exchange controls, problems such as repatriation may arise. The costs of the limitation of investment is the ceding of control over the need for future additional investment and over its provision.

(2)- Limitation of Risk: One of the most distinct advantages of joint ventures is the limitation of the risk of the failure of the enterprise. When a joint venture is established

to introduce a range of products into a country by local production, the investment of the foreign partner may largely comprise the transfer of industrial property rights and the technological know-how and supply of plant and machinery, with the local partner providing the entire required finance. This substantially reduces the financial risks to the foreign investor.

(3)- Overcoming Nationalistic Prejudice: A joint venture with a local partner may help alleviate nationalistic sentiment and hostility towards foreign investment. In many countries foreign owned businesses are either not permitted or are subject to prior approvals which are usually difficult to obtain. A local partner with the right connections will help speed up the approval process.

(4)- Merging Skills and Strengths: This is probably the most obvious positive advantage of joint ventures. A joint venture may provide the best means for merging certain skills and strengths. There may be technical expertise available without financial backing, and a joint venture between a technically superior and a financially strong partner may be the best solution. In international joint ventures, the foreign investor benefits from the local connections and knowledge of the local partner not readily available to him.⁵⁷

3.7- Disadvantages of Joint Ventures⁵⁸

(1)- Joint Decision-Making: Joint control of an enterprise obviously means joint decision making and many top executives find it very difficult to share decision making, an aspect of management which they consider to be their most important prerogative. It is however, important to note that it is not only the problem of sharing decision making but the question of management style itself. These problems are magnified when the partners' own pattern of organisation and management style and the degree to which

decision making is centralised or decentralised, differ. This can lead to serious conflict and stress between the joint venture partners and managers which is partly brought about by differing time-scales of decision making.⁵⁹

(2)- Conflict of Interest: In any joint venture, conflicts of interest arise between the partners and between the interests of one or other participant and those of the joint venture. For instance, a partner may look for benefits that would come to him rather than to the joint venture.⁶⁰ (This situation, as we shall see in the next section is especially true of the Japanese joint ventures in other countries). Moreover, one should also note that joint ventures are often staffed, at least initially, by seconding the employees of the partners, and naturally the problem of dual loyalties can easily arise.

Finally, business and the world as a whole are dynamic. The factors that may have been attractive at the outset and had brought the partners together in the first place may lose their appeal or disappear all together, or other unforeseen situations may arise. This could clearly lead to conflicts of interests between the partners in the joint venture.⁶¹

4.0- Japan's Foreign Investments

Prior to World War II, except for a limited experience during the colonization of Korea, Taiwan, and Northeast China (Manchuria), Japanese firms had little foreign operations experience. During the war quite a few Japanese had opportunities to do business in South East Asian countries in conjunction with military expansion [that is apart from the normal trading activities].⁶² Therefore, it was not until the late 1960s/early 1970s that Japanese foreign investment really took off. (For details of Japanese foreign investments after the war see Chapter 3).

4.1- Theories on the Uniqueness of Japanese Foreign Investment

Some researchers like K. Kojima (1973) and T. Ozawa (1979) have presented theories that the Japanese style of foreign investment in the post-war is fundamentally different from that of Western (mainly American) foreign investment. These theories all begin with the argument that the "monopolistic theory" or "specific advantage" theory of foreign investment (discussed in section 2 above) do not explain Japanese foreign direct investment. Instead, both Kojima and Ozawa present their own theories called "macroeconomic" theories of foreign direct investment which they claim explain exclusively the Japanese foreign direct investment.

4.1.1- Kojima's Theory

It was Professor Kiyoshi Kojima who first proposed the "macroeconomic" theory of foreign direct investment to explain the Japanese style of FDI. Kojima's basic theorem states " Direct foreign investment should originate in the investing country's comparatively disadvantaged (or marginal) industry (or activity), which is potentially a comparatively advantaged industry in the host country. This may be called, in brief, 'the principle of complementing comparative-advantage pattern' or 'the principle of DFI originating in the marginal (including sub-marginal) industry'."⁶³

Kojima argues that this type of foreign investment is "trade oriented" in that it results in expansion of international trade as each country concentrates on the type of industries in which she has a comparative advantage, and exports the products of these industries and in exchange imports the products of industries in which she is comparatively disadvantaged (international division of labour).

Professor Kojima claims that Japanese foreign direct investment [in the 1960s-70s]

followed this pattern in that Japanese firms invested abroad in industries in which she had become uncompetitive. These included labour intensive industries (like textiles, because of increasing shortage of labour in the 1960s), and natural resources development or processing industries in which, due to lack of indigenous resources, Japan was becoming almost totally dependent upon foreign supplies.

Moreover, Kojima argues that the American type of foreign investment is "anti-trade-oriented" as it results in contraction of international trade. This occurs because American firms undertake foreign investment in industries in which the U.S. has a comparative advantage and the host country does not (technology intensive industries). He calls his own theory the "macroeconomic" approach, and others like Vernon and Hymer the "business administration" approach to foreign direct investment. He reasons that such a classification is because the former contemplates the wider economic implications of foreign investment for both the home and investing countries, while the latter considers only absolute costs and profits of foreign investment from the view point of multinationals.

4.1.2- Ozawa's Theory

Ozawa's theory, which is essentially an extension of Kojima's theory, is as follows:

" First, the marginally efficient firms that must exit from the contracting sector are most likely to find it much easier to set up their own line of business overseas, where factor endowments are more favourable for them than at home (that is to cross a national border) than to re-establish themselves *de novo* in the expanding sector at home (that is to enter a new industry). ... Moreover, the macroeconomic forces of international

trade exert pressure for overseas production in a more suitable factor-endowments environment on the marginally efficient firms and not on the most efficient firms. In contrast, the monopolistic theory, the leading firms (the "technostructures" and "product-life-cycle" firms) are the first to move overseas."⁶⁴

Ozawa's theory is based on the classical growth theory, the Ricardo-Hicksian trap of industrial stagnation.⁶⁵ According to this theory, an industrial economy cannot expand indefinitely as sooner or later it will encounter "irremovable scarcities" of key factors such as land and labour. Ozawa argues that Japan reached this growth barrier in the mid-1960s by experiencing labour shortages and rising wage rates, and that for Japan foreign direct investment is an escape from industrial stagnation brought about by increasing scarcities of natural resources and labour. He further elaborates that this mode of escape is chosen by collective will or government as the country is committed to re-organising her industrial structure. For evidence to support his point, he cites the fact that the Japanese government has used various subsidies to encourage Japanese firms to invest abroad.⁶⁶ Finally, Ozawa infers that "one major characteristic of Japanese multinationals is that they are strongly influenced by the macroeconomic factors of their own economy and by those of the host countries."⁶⁷

4.2- Other Theories of Japanese Style of Foreign Investment

The above two theories are, however, not advocated by other Japanese researchers. Yoshi Tsurumi (1976) and Michael Y. Yoshino (1976), for example, accept the applicability of "specific-advantage" or "product-life-cycle" theories of foreign investment to Japanese overseas investments. According to them, Japanese foreign direct

investment is undertaken for either defensive or aggressive reasons. Such investments, they point out, are carried out by Japanese companies to expand their markets or to protect them from protectionism, to reach economies of scale, or to realise specific advantages accumulated by the parent company. These are really the same reasons used to explain the American foreign investment, and any apparent difference, they conclude can be explained by the late development of Japan as an industrial country.⁶⁸

Other researchers of foreign investment like Chung H. Lee (1980 and 1984),⁶⁹ H.W. Arndt (1974)⁷⁰, and Peter J. Buckley (1983 and 1985)⁷¹, however, reject Kojima's and Ozawa's theories as having no proper theoretical foundation or empirical evidence to support them. They also maintain that there are no fundamental differences between Japanese and American foreign direct investments, and any likely divergences are due to the late industrialisation of Japan and hence her delayed entry into the international investment scene.⁷²

There is, however, some evidence supporting the Ozawa's proposition. Ballon(1973)⁷³ states that contrary to other industrial nations where foreign investments are largely a matter of corporate policy, in Japan they appear more closely related to a national policy in line with the "Japan Inc" syndrome.⁷⁴ He adds that MITI [in the 1960's] developed a policy called "resources diplomacy" which stressed the vital need for Japan to guarantee her own supply of resources, while respecting the desires of the less developed world: its main supplier. According to Ballon, the term "diplomacy" makes it abundantly clear that the investment in resources development cannot be determined only as a corporate objective, but it must be integrated in some national policy.⁷⁵

Moreover, Ballon adds that Japan is also interested in the "international division of labour" which aims at making use of rich labour resources in the developing countries,

while at the same time improving the Japanese industrial structure.⁷⁶

4.3- The Motives of Japanese Foreign Investment

In the last section, different motives for Japanese foreign direct investment were analyzed from a theoretical perspective. In this section, such motives will be considered from a practical viewpoint.

As discussed above, Ballon (1973) states that Japanese foreign investment, in line with "international division of labour" pursues two objectives: search for cheaper labour, especially in the neighbouring countries, and securing a steady source of raw materials by establishing processing at or near the exploration site.⁷⁷

The need to expand overseas markets and secure a steady supply of raw materials as the main motives of Japanese foreign investment can be clearly seen in response to surveys carried out by the Export-Import Bank of Japan. In the 1968 survey, only 4% of "productive" investors (i.e, excluding commercial and financial investors) gave dividends as the primary aim of their investment.⁷⁸ The main aims stated by manufacturing investors were, in order of frequency, the development of markets, the protection of markets, export of components and materials, export to third countries, and export of machinery. The Bank's 1970 survey showed 71% of investors imported most of their main materials from Japan. Of extractive investors (agriculture, fisheries, and mining) 71% gave import to Japan as their main aim in 1968, and this had risen to 78% in 1970.⁷⁹ Moreover, in the 1968 survey, a large proportion of extractive investors mentioned both price and security gains as their main motive in undertaking foreign investment.⁸⁰

Clark concludes that profits from overseas investments (which he states are "trade oriented"), are realised indirectly by the Japanese investor, in the form of greater security

and/or price differences in the exports or imports secured. He elaborates that the Japanese investors' desire to seek much of the return from their investment through exports or imports can explain their preference for joint venture with foreign partners.⁸¹ This perceived Japanese preference for joint ventures will be the topic of discussion in the next section.

4.4- Forms of Japanese Foreign Direct Investment

As already mentioned, Clark believes that the trade orientation of Japanese foreign direct investments has an important impact on the form of her investment overseas. He describes American and (to a lesser extent) British motives for foreign investments as seeking a financial (dividend) return from the capital and/or skills they provide, which they are reluctant to share with others. This could, according to him, explain the high proportion of equity they hold in their overseas investment projects.⁸²

The Japanese share in the equity of their investment projects, however, tends to be comparatively low. One reason could be that foreign ownership of companies and assets in the developing countries (where in the 1960s and 1970s most of the Japanese investments were located) are or were restricted. But even in countries where there were no restrictions on foreign ownership, the Japanese preferred joint ventures to wholly or majority owned subsidiaries.⁸³

The 1970 survey by the Export-Import Bank of Japan referred to earlier, showed that [in the 1960s] only 18% of projects under study were fully Japanese owned, and in 41% of cases the Japanese share of the equity was less than 50%.⁸⁴

Based on these findings, Clark argues "Provided the share of the Japanese investor in the project is sufficient to give him control over the project's purchasing and/or sales

policies, he hopes through trade gains to draw a return for his contribution to the venture. And it is in the nature of this contribution that the essential difference between Japanese and the more traditional forms of direct investment can be found."⁸⁵

Furthermore, Mason (1980) argues that in comparison with the United States and Europe, Japan has superior technology in low technology industries and that in comparison with less developed countries, Japan has superior access to the markets of advanced countries (including herself). These advantages, according to Mason, are short-lived, and can explain the frequent use of joint ventures by Japanese investors.⁸⁶

Lee (1980) also hypothesises that the possession of the location-specific marketing advantage by Japanese investors is a major factor in Japanese foreign direct investment in Korea and explains their preference for joint ventures.⁸⁷

Finally, Ballon (1973) expounds that the low level of self confidence of Japanese investors to undertake foreign direct investment on their own can explain their preference for joint ventures. He elaborates: "After all, exports are something that can be directed from inside Japan; investments are an altogether different matter. The consequence is then that, to the surprise of outsiders, Japanese corporations display a definite preference for joint ventures rather than wholly-owned subsidiaries."⁸⁸ Ballon adds "The Japanese government is also advocating joint venture, preferably the 50-50 capital participation, as the ideal form of overseas investment, half local, half Japanese."⁸⁹

5.0- The Application of the Above Theories to the Case Study

As stated in the introduction to the thesis, one of the aims of this study is to analyse the factors and reasons for the establishment of the Iran Japan Petrochemical

Company. It was also proposed to analyse the factors which led to the dissolution of the company.

To do so, the theoretical framework set up in Section 3.0 and to a lesser extent in Section 4.0 shall be applied. More specifically, it was stated that "in order to understand why some joint ventures are successful and some are not, one must look into the strategy of the parent firms, the reasons for entering into the joint venture in the first place, the firms' organisational characteristics as well as their industries. Success cannot be measured in terms of stability since the purpose of a joint venture is not to last, but rather to contribute to the fulfilment of the goals of its parents. Therefore, one must look carefully into what actually goes on in the process of managing the joint venture".⁹⁰

In the remainder of this study, the above theory will be applied to the case study in the following manner:

In Chapters Two to Six, an attempt will be made to determine what factors led to the establishment of the petrochemical joint venture between the Mitsui Group of Japan and the National Petrochemical Company of Iran.

It is widely believed that the heavy dependence of Japan on imported oil, particularly from the Middle East, and the peculiar character of the Japanese oil industry, atypically influenced by foreign petroleum companies, were the major factors in the Japanese business interests and the government support for the establishment of the joint venture with Iran. Therefore, in Chapter Two a detailed analysis of the characteristics of the Japanese domestic oil industry and her energy policy in the pre- and post-war periods will be presented. Chapters Two and Three will discuss how Japan became dependent upon imported oil from the Middle East, particularly Iran, in the post-war period.

Chapter Four will argue that Iran's aspirations for industrialisation and economic and social development played the key role in her decision to establish the petrochemical joint venture with Japan. That chapter and Chapter Six will discuss the proposition that the government's and the National Petrochemical Company's strategy to establish an export oriented petrochemical industry was also a factor in the Iranians' preference for a joint venture with Japan and particularly with Mitsui Bussan; one of Japan's largest trading companies.

Chapter Five will contend that it was Mitsui Bussan's desire to strengthen its oil business that enticed the company's top management to enter into the petrochemical joint venture. Moreover, it is believed that the trading opportunities created by the joint venture were also important factors in Mitsui's involvement in the joint venture.

In Chapters Five and Six, the historical development, and managerial and organisational aspects of Mitsui Bussan and the National Petrochemical Company of Iran (NPC) will be discussed in detail as they are considered to be of great relevance to the management of the joint venture itself.

In Chapter Seven, the history of the establishment of the Iran Japan Petrochemical Company from 1968 to its dissolution in 1990 will be presented. The aim of that chapter is to find out what actually went on in the management and organisation of the joint venture and also other external factors in its two decades of life which may have contributed to its failure.

Finally, in Chapter Eight, a short discussion on the characteristics of the petrochemical industry will be given. Moreover, a detailed analysis of the factors which are believed to have led to the failure of the joint venture will be presented. It shall be argued that the changes in the strategies of the parents (Mitsui Bussan and NPC) and

the failure of the joint venture to fulfil the goals of its parents were the major factors in its eventual dissolution.

6.0- Conclusion

In this chapter various theories on the motives of foreign direct investment were discussed and the benefits and drawbacks of such investments from the standpoint of developing countries were examined. Next, various definitions of joint venture were presented, and causes of the establishment of this form of foreign investment were analyzed. The management and stability of joint venture were also discussed.

Next, the Japanese style of foreign investment was analyzed. Various theories which postulate that the Japanese style of foreign direct investment is different from that of the U.S. were discussed. In addition, the opinion of other researchers who reject these theories and believe that the behaviour of Japan as a foreign investor is not unique were briefly analyzed. Lastly the motives of Japanese firms and their government for undertaking and supporting direct foreign investment, and the reasons for Japanese investors' preference for joint ventures were examined.

Finally, the applicability of the theories on the causes of establishment of joint ventures and their failure to this case study was explained. The next chapter will discuss how the dependence of Japan on imported oil and the peculiar characteristic of the Japanese oil industry became a factor in the establishment of IJPC.

Notes

1.TSURUMI, Yoshi, "Multinational Management: Business Strategy and Government Policy", Ballinger Publishing Company (1977), p.73. Here, only direct foreign investment will be discussed, as portfolio investment has no relevance to this case study.

2.OMAN, Charles, (1984), chapter one. See this chapter for the definition of these terms.

3.Koutsoyiannis, A., "Non-Price Decisions: The Firm in a Modern Context", London, Macmillan, 1982, pp.311-12.

4.KOJIMA, Kiyoshi, " A Macroeconomic Approach to Foreign Direct Investment", Hitotsubashi Journal of Economics, vol 14, June 1973, pp.2-3.

5.See HYMER, Stephen, "The International Operations of National Firms: A Study of Direct Foreign Investment", The MIT Press, 1976.

6.For details of the product-life-cycle theory see Raymond Vernon, "sovereignty at Bay: The Multinational Spread of US Enterprises", Basic Books, 1971.

7.Richardson, J.D., " On 'Going Abroad': The Firms Initial Foreign Investment Decision", Quarterly Review of Economic and Business (1971).

8.CAVES, R.E., " Causes of Direct investment: Foreign Firms' shares in Canadian and UK Manufacturing industries", Review of Economics and Statistics, 1974, pp.279-93.

9.This hypothesis is espoused by Hugh G.J. Aitkin, " American Capital and Canadian Resources", Harvard University Press, 1961.

10. See W. Gruber, D. Mehta, and R. Vernon, " The R & D Factor in International Trade and Investment of US Industries", Journal of Political Economy, vol 75, 1967, pp.20-37.

11.J. Bain, " Barriers to New Competition", Harvard University Press, 1956.

12.Thomas Horst," The theory of Multinational Firm", Journal of Political Economy, vol 70, 1971, pp.1959-70

13.See D.T. Brash," American Investment in Australian Industry", Australian National University Press, 1966; and J.D. Richardson (1971), pp.7-22.

14.See L.B. Krause and K.W. Dam," Federal Tax Treatment of Foreign Income", Brookings Institute, 1964, pp.92-3; Brash (1966), p.48.

15.C.P.Kindleberger," American Business Abroad: Six Lectures on Direct Investment", Yale University Press, 1969, p.57; H. Leibenstien, "Allocative Efficiency vs X-efficiency", American Economic Review, 1966; A.Koutsoyiannis, "Managerial Job Security and the Capital Structure of Firms", Manchester School, 1978.

16.Vernon (1971); R. Vernon, " International Investment and International trade in the Product Cycle", Quarterly Journal of Economics, vol 80, 1965, pp.190-207.

17.See Richardson (1971).

18.For a detailed study and theoretical treatment of these motives see A. Koutsoyiannis, op.cit., chapters 6 & 7; Richardson, 1971.

19.The following discussion is based on J.H. Dunning, " American Investment in British Manufacturing Industry", Oxford University Press, 1956, pp.155-57; and A. Koutsoyiannis 1982, pp.356-59.

20.For a critical evaluation of such benefits see R.E. Caves," International Corporations: The Industrial economics of Foreign Investment", Economica, 1971; R.E. Cave," Multinational Firms, Competition, and productivity in Host-Country Markets", Economica, 1974; A. Koutsoyiannis 1982, chapter 7; B.I. Cohen, " Multinational Firms and Asian Exports", Yale University Press, 1975.

21.Koutsoyiannis, ibid pp.351-356. These benefits mainly accrue as a result of the horizontal type of foreign investment. Vertical foreign investment is, as we shall see later, less beneficial to the host economy.

22.This discussion is based on Y. Tsurumi (1977), chapter 4.

23.S. OTTERBECK, Lars (1985), in Takamiya, S. and Thurley, K. (eds), (1985), p.49.

24.For a comprehensive discussion of other types of foreign investments see C.Oman (1984), and also C. Oman," New forms of Investment in developing Country Industries: Mining, Petrochemicals, Automobiles, Textiles, Food", OECD, 1989.

25.Herzfeld, Edgar, "Joint Ventures", Jordan & Sons Limited, 1983, p.7.

26.Boulton, A.H., "Business Consortia", Sweet & Maxwell, 1961.

27.Herzfeld, p.7.

28.Young, G.R. and Bradford, Standish Jr., "Joint ventures: Planning and Action", Financial Executives Research Foundation, New York, 1977, pp.11-15.

29.Otterbeck (1985), pp.49-50.

30. BOYLE, Stanley E., "An Estimate of the number and the Size Distribution of Domestic Joint Subsidiaries", *Antitrust Law and Economic Review*, 1968, 1, pp.81-92.

31. Pfeffer, Jeffery, and Nowak, Philip, "Joint ventures and Interorganizational Interdependence", *Administrative Science Quarterly*, vol 21, September 1976, p.400.

32. Edstrom, A., and Hogberg, B., "The Strategic Context of Interfirm Cooperation", Brussels, European Institute of Advanced Studies in Management, 1977.

33. The following discussion is based on Herzfeld (1983), *op cit*, pp.13-14.

34. Otterbeck, L., (1985), p.51.

35. Berg, S.V. and Friedman, P., "Joint Ventures in American Industry", Part I, Mergers and Acquisitions, 1978, p.30.

36. Edstrom, A., Hogberg, B., and Norback, L.E., "The Use of Cooperative Strategies by Swedish Manufacturing Firms", Institute of International Business at the Stockholm School of Economics, Research Paper Series 79/2, 1979.

37. Pfeffer and Nowak (1976), p.402.

38. *Ibid*.

39. Hawley, Amos, "Human Ecology", New York, Ronald Press, 1950, p.36.

40. Pfeffer and Nowak, pp.402-3.

41. *Ibid*, p.409.

42. Bivens, K.K. and Lovell, E., "Joint Ventures with Foreign Partners", New York, National Industrial Conference Board, 1966, p.48.

43. For details see Franko, L.G., "Joint Venture Survival in Multinational Corporations", New York, Praeger, 1971, p.29.

44. *Ibid*.

45. Stopford, J., and Wells, L.T., "Managing the Multinational Enterprise: Organisation of the Firm and Ownership of the Subsidiaries", New York, Basic Books, 1972.

46. This section draws on Otterbeck (1985), pp.54-55.

47. *Ibid*.

48. Franko (1971), p.4.

49. *Ibid*, p.5.

50.Ibid, p.5-6.

51.Ibid, p.6.

52.Otterbeck (1985), p.56.

53.Ibid.

54.Otterbeck (1985), p.56-7.

55.Ibid, p.57.

56.The following discussion draws from Herzfeld (1983) op cit, pp.24-26.

57.For an in-depth analysis of the advantages and disadvantages of joint ventures see Kolde, E.J., "International Business Enterprise", Prentice-Hall Inc, 1968.

58.This section is based on Herzfeld, op cit pp.26-27.

59.Franko, L.G., 'The Art of Choosing an American Joint Venture Partner', in Brooke and Remmers (eds), "The Multinational Company in Europe - Some Key Problems", Praeger Publishers, 1972, p.65.

60.Roulac, S.E., "Structuring the Joint Venture", Mergers and Acquisitions, Spring 1980, p.8.

61.However, as discussed above, Franko states that one should not concentrate on the conflicts within the joint venture, but rather on the changes in the strategy of the partners as causes of instability or failure.

62.Koshiro, Kazutoshi (1985), in Takamiya and Thurley (eds), op.cit, 1985, p.205.

63.Kojima, Kiyoshi, " Macroeconomic Versus International Business Approach to Direct Foreign Investment", Hitotsubashi Journal of Economics, June 1982, p.2.

64.Ozawa, Terutomo, " Multinationalism, Japanese Style: The Political Economy of Outward Dependency", Princeton University Press, 1979, P.61.

65.Hicks, J., " The Future of Industrialism", International Affairs, vol 50, April 1974, pp.218-29.

66.For subsidies provided by the Japanese government to encourage Japanese companies to invest abroad see Ozawa (1979), pp.33-39.

67.Ibid, p.39.

68.For a comprehensive analysis see Tsurumi, Yoshi, " The Japanese Are Coming: A Multinational Interaction of Firms and Politics", Ballinger Publishing Co., 1976; and Yoshino, Michael, " Japanese Multinational Enterprises", Harvard University Press, 1976.

69.Lee, Chung H., " United States and Japanese Direct Investment in Korea: A Comparative Study", Hitotsubashi Journal of Economics, vol 20-2, February 1980, pp.26-41; and Lee, C.H., " On Japanese Macroeconomic Theories of Direct Foreign Investment", Economic Development and Cultural Exchange", vol 324, July 1984, pp.713-723.

70.Arndt, H.W., " Professor Kojima on the Macroeconomics of Foreign Direct Investment", Hitotsubashi Journal of Economics, vol 15-1, June 1974, pp.26-35.

71.Buckley, Peter J, " Macroeconomic Versus International Business Approach to Direct foreign Investment: A Comment on Professor Kojima's Interpretation", Hitotsubashi Journal of Economics, vol 24-1, June 1983, pp.95-100; and Buckley, P.J., " The Economic Analysis of the multinational Enterprise: Reading Versus Japan", Hitotsubashi Journal of Economics, vol 26, December 1985, pp.117-124.

72.This is a very brief summary of the above three scholars evaluations of the Kojima and Ozawa theories, and in some respects it may not reflect their full analysis. For a comprehensive critique of these two theories see the references in the last three notes.

73.Ballon, Robert J., " Japan's Investments Overseas", Aussenwirtschaft, vol 28-3/4, September/December 1973, pp.128-153.

74.Ibid, p.141.

75.Ibid.

76.Ballon (1973), pp.141-2. This is a quotation from "Foreign Trade of Japan 1971", Tokyo, JETRO, 1971, pp.26 and 31.

77.Ibid, p.144.

78.Clark, Gregory, " An Analysis of Japanese Direct Investment Overseas in Postwar Years", the Developing Economies, vol IV-I, March 1971, pp.58-64, p.59.

79.Ibid.

80.Ibid, p.60.

81.Ibid, p.61.

82.Ibid, p.60.

83.Ibid, p.60-61. Please note that this discussion is based on data for the late 1960s/early 1970s. The motives, forms, and destinations of Japanese foreign investments in the 1980s/1990s have undergone major changes. In this chapter we are primarily concerned with the former rather than the latter period of Japanese foreign investment.

84.Ibid.

85.Ibid.

86.Mason, R. Hal," A Comment on Professor Kojima's 'Japanese Type Versus American Type of Technology Transfer'", Hitotsubashi Journal of Economics, vol 20-2, February 1980, pp.42-52.

87.See Lee, Chung H. (1980), op cit, for a full discussion of the motives of Japanese investments in Korea.

88.Ballon (1973), pp.148-9.

89.Ibid.

90.See Section 3.5 above.

CHAPTER TWO

THE JAPANESE OIL INDUSTRY

1.0- INTRODUCTION

It is widely believed that the paucity of indigenous energy resources, particularly oil, and the heavy dependence of Japan on Middle Eastern oil and Western petroleum companies for imports were the main factors in inducing the Japanese government to support the petrochemical joint venture between the Mitsui Group and Iran. It was hoped that this would help secure a stable supply of oil from Iran, Japan's biggest supplier of oil in the mid-1960s.

The Japanese oil industry is the most fragmented, in the sense that there are almost no integrated oil companies in Japan which are active both in upstream and downstream businesses. Moreover, the oil industry is the only sector of the Japanese economy which is dominated by foreign capital. As a result of this situation, successive Japanese governments (especially MITI) and some business leaders have, for a long time, tried to regain control of the industry by consolidating it, plus acquiring access to overseas sources of oil.

It was due to these considerations that the Japanese government provided financial assistance to the petrochemical joint venture. This chapter will therefore, examine why Japan has become so heavily dependent on imported oil and will also discuss the factors which have been influential in shaping the Japanese oil industry.

In order to comprehend the present Japanese oil industry, one needs to know the history of the Japanese energy industries in the pre-war and Occupation periods. Next section will, therefore, look at the Japanese coal, electric and oil industries in the pre-war years.

2.0- The Energy Industries in Pre-War Japan

2.1- The Coal Industry

There were three main sources of energy in pre-war Japan: coal, electric, and oil. Coal was by far the most important of the three, supplying up to 66.2% (1940) of her primary energy requirements (see Table 2.4). In fact, coal was central to the Japanese economy for the first fifty years of her industrialisation.

Coal mining began in Japan more than two hundred years ago in Kyushu, and by the early 19th century Japan had, by the standards of the day, an advanced mining industry.¹ After the Meiji Restoration of 1868, the government initiated the development of the coal and metal mining industries and coal exports became a major source of foreign exchange for the new government. During the 1880s, however, the government, largely because of budgetary problems, sold off all mines to a few big firms. These mines which were very profitable helped companies like Mitsubishi, Mitsui, and Sumitomo to diversify into new businesses and become zaibatsu² conglomerates. The biggest of these mines, the Miike coal mine in Kyushu was sold to the Mitsui group, and according to Shibagaki Kazuo, "The mining company was the second source of profits after the Mitsui Bussan Trading Company".³ The use of mines as a means to accumulate capital for use in other parts of the zaibatsu had implications for the coal mining industry well into the postwar period. The mine owners were only interested in the mines as an extractive industry, and so did not invest their profits in new mining techniques, or advanced machinery. The mine operators relied mainly on very low waged labour, as well as market restricting measures to increase their profits. This meant that coal consumers, principally, electric utilities and steel producers, had to pay high prices for their required coal. This, coupled with the fact that the Japanese coal was of low quality, persuaded the

Japanese government and business (including zaibatsu) to seek large supplies of high quality coal from other Asian countries. The paucity of indigenous energy resources was, therefore, a major factor in the colonizing of these countries before and during the Second World War.

2.2- The Electric Industry

Electric power was first introduced into Japan by an engineer who set up the Tokyo Electric Company in 1883. The company produced electricity for lighting only using coal as fuel. The engineer, who had the backing of the bureaucracy, failed to win the support of the zaibatsu, and as a result, the development of electric power was left to independent entrepreneurs and bureaucrats, a pattern which continued into the post war period (see Table 2.4). The first electric power installations were coal fired, but hydro-electricity gradually became more important, supplying up to 32.7% of Japan's primary supply in 1945.⁴ The hydro-electric facilities relied on Japan's only abundant natural resource: water, to generate electricity. From the start there was intense competition between various electric companies which forced many of them into bankruptcy. By 1928 five large generating companies emerged which dominated the industry, although competition remained fierce between them. By the 1930s, the growing importance of electricity to the military, especially the munition factories, and the need to provide electricity to villages induced the bureaucracy to seek a stable and inexpensive supply of electricity through centralisation and state control. The government's earlier attempts to control the industry met the fierce resistance of the owners. By the start of the China war in 1937, however, a new impetus was given to the need to control the industry. In March 1938, the Diet enacted a law which led to the establishment of

Nippon Hassoden Kabushiki (Hassoden), a state controlled but privately owned company which generated power and sold it to the transmission and distribution companies. Furthermore, in September 1941, electric power transmission and distribution companies were similarly centralised into nine regional privately owned and state controlled corporations known as Haiden.⁵ This pattern of private ownership and public control continued through the war and the Occupation up to the early 1950's when under the direction of the SCAP, the industry's control reverted back to the private sector.

2.3-The Petroleum Industry

The Japanese oil industry was established in 1869, about ten years after the birth of the industry in the U.S.A, when the Meiji government invited some American geologists to prospect for oil in Japan. In 1888, after a few years of failure, the Nippon Oil Company, established by an entrepreneur, discovered oil in Amase, Niigata, and Japan's first commercial production started in 1891.⁶

In the first few years of the oil industry, many companies were established in Japan but most of them went bankrupt due to intense competition and under-capitalization. One very important factor which distinguished the Japanese oil industry from the other two energy industries, coal and electric, or any other industry for that matter, was that the oil business was from the beginning dominated by foreign companies and capital.

Two international oil companies, Standard Oil of New York (Stanvac)⁷, and Samuel Trading Company (later becoming a part of Royal Dutch Shell), started to sell oil products in Japan around 1893. As the imported oil products were cheaper than the domestic ones, the Japanese oil companies asked for protection and the government

introduced tariffs on imported oil. The foreign companies responded by setting up their own exploration, production, and refining arms in Japan. This move caused concern among the bureaucracy and some of the industry's leaders, and they appealed for the protection of the domestic industry. Their efforts were, however, not successful, and the competition continued. Furthermore, the largest oil companies, namely Nippon Oil, Hoden (a domestic firm), Standard, and the Rising Sun (the Japanese subsidiary of Shell Oil) made many attempts to reach some form of sales agreement, but their efforts bore no fruit. A stable arrangement was impossible because the demand was increasing by leaps and bounds, as oil was becoming more and more important for lighting, road and sea transport, and to the military and particularly the Navy.

The oil industry differed from the other two energy industries in other respects as well. First, it didn't play a major part in the Japanese economy in the pre-war period, only supplying up to 10.4% of Japan's primary energy requirements in the 1930s (see Table 2.4). For many years oil was a symbol of modernity, rather than an economic asset, to be exploited by energy consuming industries. After the First World War, however, when the Japanese Navy started to convert its fleet to oil powered ships, it became a strategic commodity, and it (the Navy) became the biggest consumer of oil in the 1930s. Petroleum had become so vital to the Navy that it went into production on its own in 1921 by building a refinery in Tokuyama. Total demand, (Army, Navy, and civilian) for petroleum products rose from around 2.5 million kilo litres in the early 1930s to 5.4 million kilo litres in 1937.

Secondly, only 10 to 15 percent of Japan's petroleum was supplied by indigenous sources, and hence, imports were far more important than domestic production (see Table 2.1). Most of this oil was imported from the United States, with the residual from

the Dutch East Indies. The crude oil and oil products were imported either by the Rising Sun Petroleum Company and Standard Vacuum Corporation (Stanvac), and sold directly to consumers, or were sold by these two companies and other U.S independents to various Japanese oil companies.

Table 2.1: Domestic Oil production and Imports, 1930-1960
(1,000 kl)

Year	Domestic Production	Imported Crude	Imported Products	Total Imports
1930	317	570	1,515	2,085
1935	351	1,322	2,911	4,243
1940	331	2292	1,922	4,214
1941	289	694	197	891
1942	263	560	6	566
1943	271	980	4	984
1944	267	209	-	209
1945	243	-	15	15
1946	213	-	151	151
1947	203	-	1,178	1,178
1948	179	-	*	*
1949	218	24	2,010	2,034
1950	328	1,541	844	2,385
1951	372	2,844	1,172	4,016
1952	339	4,432	1,022	5,454
1953	334	5,748	2,967	8,715
1954	338	7,440	2,959	10,399
1955	354	8,553	2,386	10,939
1956	350	11,438	1,900	13,338
1957	361	14,833	3,427	18,260
1958	410	16,311	1,986	18,297
1959	454	21,621	1,948	23,469
1960	593	31,116	3,238	34,354

Source: Japan Statistical Yearbook, Prime Minister's Office, 1953, pp.202,203; 1961, p.203.

Notes : * = not available. For 1941-1946 imported products includes only gasoline, kerosene, and lubricating oil.

As a result of the combination of these factors, the need to control the flow of imported oil, as well as the overseas sources of oil in neighbouring Asian countries, particularly the Dutch East Indies became apparent to the Japanese planners and the military, and the latter became the most vociferous voice calling for the consolidation and state control of the industry.⁸ The military and the bureaucracy and the Japanese oilmen were very concerned with the domination of the industry by the two international oil majors which were supplying well over 50% of the country's oil demand. Their efforts to reduce, or contain the two companies' share of the Japanese market met fierce resistance from the two which, from time to time, sought the protection and help of their respective governments. Furthermore, the Ministry of Foreign Affairs, which was fearful of an oil embargo by the United States, tried to restrain the actions of the military and other sections of the bureaucracy.

Due to the intense competition, many smaller Japanese oil companies went out of business, and by the mid-1920s, the oil sales business had been narrowed down to 6 companies, only some of which refined in Japan. These companies included: Rising Sun, Stanvac, Mitsubishi Shoji, Mitsui Bussan, Nippon Oil, and Ogura Oil Company.

More important than the consolidation of the industry was the recognition of the fact by the Japanese officials and the oilmen that the domestic reserves were very small compared to the newly discovered oil fields in the Middle East, U.S.A., Latin America, Russia, and the Dutch East Indies.

Until 1925, the government's petroleum policy for the civilian economy was passive, and largely ineffectual.⁹ In that year, however, the Navy established a study group for petroleum policy (Sekiyu Chosakai) which was mainly concerned with military planning. One year later, the Ministry of Commerce and Industry (MCI) created its Fuel

Investigation Committee in response to demands from the Japanese oil industry for a national fuels policy. Moreover, the government started to subsidise domestic oil exploration and production, which stimulated great activity. These efforts, nevertheless, failed to increase domestic production, for the simple reason that Japan was *not* oil rich.

An observation which is important to this case study is that the Mitsubishi zaibatsu, through a capital tie-up, became a 50% partner of the Associated Oil Company (later Tidewater Oil Company, then Getty) in 1924, and then in 1931 they established an equally owned joint venture called the Mitsubishi Oil Company, which was the only Japanese oil company to have foreign capital participation before the war. This set an important precedent for the Japanese petroleum industry. Mitsubishi Oil imported and refined oil in Japan, and, therefore, had a major presence in the industry before the war. The Associated company's role was to supply crude and technology to the joint venture.

In contrast, the Mitsui zaibatsu refused to enter the oil refining business, and instead concentrated on importing and selling oil products in Japan. This was probably due to the fact that the Mitsui group was the biggest producer and importer of coal in Japan. So it either did not see the need to have a large oil company, or it considered oil as a threat to its traditional and most profitable business and decided to concentrate on the coal business.

This state of affairs had major implications for the two groups, and is a factor in the postwar weakness of the Mitsui Group in the oil business vis-a-vis its long time rival, the Mitsubishi Group, which is a major player in today's Japanese oil industry. (There are other factors responsible for the post-war weakness of the Mitsui Group in the oil business, namely the dissolution and fragmentation of the zaibatsu by the SCAP during the occupation, and this will be discussed in Chapter Five.)

As mentioned earlier, the efforts of the Japanese bureaucracy and oil executives in the 1920s to bring some order into the oil market, and to increase the domestic production largely failed, and the intense competition between oil companies, particularly from the two international oil giants, almost wiped out the profits of the domestic oil firms. The MCI officials and the oil industry leaders called for the regulation of the industry and an end to the excessive competition, especially from the foreign companies. Imperial Navy, which was the biggest consumer of oil, became yet again concerned about the security of supplies and the domination of the industry by foreigners. So in early 1933 it established the inter-ministerial National Oil Policy Council which was charged to examine the disorder in the market and foreign domination of the Japanese oil industry and market.¹⁰ The Council which was attached to the MCI's Mining Bureau produced two alternative plans:

The first plan called for the nationalisation of the entire oil industry, that would give the state a monopoly on all crude production, refining, trade, and sales, which in turn it would then delegate to a semi-private, semi-public corporation. The most controversial part of the plan was the call for the expropriation of all the assets of the foreign oil companies in Japan.¹¹

The second plan, which was much less radical than the first one, gave the MCI the power to licence crude oil imports, refinery construction, stockpiling, and other upstream and commercial activities related to oil. It also provided the MCI with funds to subsidize oil supplies from fields outside the Anglo-American influence.¹²

The two plans were debated within the bureaucracy and with the private sector. The MOFA, which was worried that the first plan may lead foreign governments to introduce an oil embargo and other economic and diplomatic measures against Japan,

opposed the first plan. Furthermore, some officials within the MCI and the military expressed same concerns over the possibility of an oil embargo, when the country was not prepared for war.¹³

The debate finally led to the introduction of the Petroleum Industry Law (PIL), based on the second plan, which was passed by the Diet in March 1934.

As discussed earlier, an important aim of the PIL was to limit the dominance of the two foreign oil firms, Stanvac, and the Rising Sun. The law tried to achieve this by requiring all oil companies to have stockpiles of oil based on 50% of the previous years imports, and, furthermore, it attempted to reduce the market share of the two international firms by introducing quotas. The first measure was especially harsh for the two, as they imported 100% of their oil.

The two international oil companies strongly objected to these two provisions of the PIL, and in order to keep up the pressure on the Japanese, they tried to entice the American independent oil firms into not selling crude oil to Japan and her colonies and, furthermore, sought the help of their governments. The former action did not achieve any results, although the American government did ask the Japanese for the protection of the Stanvac interests but refused to make any threats regarding an oil embargo as requested by the company. This intervention by the American government on behalf of an oil company highlighted to the Japanese the strategic importance of oil and the power of the international oil companies.¹⁴

As a result of their efforts and intervention by their governments, the two foreign oil companies succeeded in mitigating those two harsh [in their view] measures of the PIL, namely, the oil stockpile requirement, and the quota adjustments¹⁵. Therefore, the Japanese bureaucracy and oil industry leaders did not succeed in curbing the influence

of foreign oil companies, and the two international giants managed, despite the PIL, to maintain their presence and profits in the Japanese market.

The Petroleum Industry Law, nonetheless, succeeded in consolidating domestic oil refining, which by the end of the war, comprised eight major firms, most of which are today Japan's most important oil companies. These firms were: Showa Oil, Maruzen Oil, Daikyo Oil, Nippon Oil, Koa Oil, Mitsubishi Oil, Toa Nenryo Kogyo, and Nippon Kogyo (Mining) Companies. (Note the conspicuous absent of Mitsui in the list). The PIL and other laws and interventions of the state before and during the war also helped to consolidate (although with less success) the transport, storage, and distribution parts of the downstream sector of the oil industry.

With the start of the Sino-Japanese War in 1937, the Japanese government took steps to encourage domestic oil exploration and production. The most important of these steps was the passing of the Imperial Fuel Industry company Law in 1937, which gave it the power to subsidise the development of domestic oil reserves. However, it soon became clear that this alone was not going to stimulate exploration activity at a satisfactory level, and a more radical action was needed. So in July 1940, the Teikoku Petroleum Company Law was passed which established The Imperial Oil Resources development Company (Teikoku Sekiyu Shingen Kaihatsu K.K.). All of the largest exploration firms which had not had much success in oil exploration partly due to the shortage of public funds joined the new company which guaranteed dividends at 6%.¹⁶ But these companies were still not prepared to accept the formal consolidation of the industry.

The government further tried to spur the production of synthetic oil and the Navy had already started research in this area. Nevertheless, these measures largely failed as

domestic oil production increased only slightly, and synthetic fuel development bore no significant results (its production by the end of the War stood only at 500 barrels a day).¹⁷ These efforts, however, sharpened the officials' and the businessmen's feeling that the paucity of the indigenous resources was a threat to national security. These failures further persuaded the military to seek overseas sources of oil.

Japanese fears over their oil susceptibility were well founded, as the British and the American officials, with the participation of Shell and Stanvac, had discussed the imposition of an oil embargo on Japan in 1934. However, the Americans were wary about imposing an oil embargo on the Japanese as they feared that this action may force the latter to seize the Dutch East Indies. The first restrictions on oil sales to Japan were introduced in July 1940, and required licences for aviation fuel and scrap metals. The move was interpreted as an attempt to check Japan's economic and military power. The Americans, nevertheless, allowed the two oil companies to make new contracts for the sale of oil to Japan in the autumn of 1940 and tensions were reduced, as that time few people in Japan, especially the Navy, felt ready for war. In August 1941, however, the U.S. officials who believed that the Japanese were about to invade the Dutch East Indies, introduced a defacto embargo against the latter by erecting bureaucratic barriers and freezing funds. The Japanese, who believed that oil was the main issue, decided that war was the only way to gain access to oil, and so invaded the Dutch East Indies and at the same time attacked Pearl Harbour, and so the Pacific War began.¹⁸

As Takehiro Sagami, a former vice-minister at the Japanese Ministry of Finance has observed:

"our first oil shock was in 1940, not in 1973. At that time America stopped shipment of heavy oil because of what we had done in Manchuria and Shanghai. The U.S. boycott turned around the Navy that had opposed war with America, and forced it to move for Indonesia. From that lesson, we

learnt that an oil cut-off may have unforeseen political consequences....and may mean the difference between life and death."¹⁹

With the imposition of the oil embargo and the start of the Pacific war, anxiety over the security of oil supplies rose dramatically among the Japanese officials and oil industry leaders. So in September 1941, after intense debate and cajoling between the MCI and Nippon oil, the largest domestic oil company, an agreement was reached between the two and other domestic producers over the creation of a new national policy company. As a result of this agreement, the Imperial Oil Company (Teikoku Sekiyu K.K.) was established in September. The company was owned equally by the state and the private sector, and Nippon Oil held nearly two-thirds of the private sector's allotment (which allowed Nippon Oil to dominate it). The new company absorbed the assets of the Imperial Oil Resources Development Company and the production departments of all major oil companies.

The reason for the separation of oil production from other activities of oil companies, and their integration in to Imperial Oil was that the oil firms were strongly opposed to a merger of their downstream business, which would have meant the total loss of control and their independence to the state, and possibly nationalisation. They were willing, however, to allow Imperial Oil to absorb their upstream business as, after the embargo, there was no oil to be produced, apart from the meagre domestic reserves, and there was no crude oil available from international suppliers either. The new arrangement allowed the Japanese oil companies to concentrate on the profitable downstream business, while at the same time transferring all the risk of exploration and production to the state, especially as Imperial oil was offering guaranteed dividends, exemption from corporate taxes, and other incentives.

The Imperial Oil Company was, however, effective in achieving its *raison d'être*, i.e. the consolidation of domestic and colonial exploration and production. It controlled 95% of domestic production from the beginning of its operations, and this rose to 98% by the war's end.²⁰

The Imperial Oil Company's creation had, however, a far more enduring influence on the Japanese oil industry. It formalised the existing structure in the Japanese oil industry, i.e. the separation of upstream and downstream activities. This separation still exists today, and is believed to be the major, if not the only, cause of the weakness of the Japanese oil industry.

It needs to be stated at this juncture that there are other equally important factors responsible for the separation of the Japanese oil industry. First, Japan has had no indigenous oil reserves of any significance. Second, Japan was a late starter in the exploitation of overseas oil reserves (beginning with the colonisation of Southeast Asia in the late 1930s) as compared to other industrialised nations. Therefore, the Japanese oil companies had no opportunity or reason to enter exploration or production (upstream) in a massive way as did the oil companies of other industrialised nations like the U.S.A (where the oil industry was born in the mid-1890s and had huge domestic reserves as well as access to oilfields in Latin America) or Britain and France who exploited the oil reserves of Iran and Algeria in the early 20th century (see Chapter Four for the case of British Petroleum in Iran). These factors, plus the fact that Japanese oil companies could buy as much crude oil as they needed from the Western petroleum companies (mainly American) in the pre-war period (before the oil embargo) and in post-war years, can explain the separation of downstream and upstream activities of the Japanese oil industry.

2.4- The Energy Industries During the War

The Japanese energy industries were put under heavy pressure during the war years as they literally had to drive the engines of the military and the industries supplying it.

The coal industry received the greatest pressure as it had to meet an increasing demand regardless of its rapidly depleting resource base. Under the banner "Coal is the source for planes, warships, and bullets", domestic coal production was increased during the war, but at the price of lowering ultimate recovery rates. Coal production peaked in the 1941-43 period. However, as many miners were taken to the battle fronts, and no new investment was made, and tools, due to wide-spread shortages had become scarce, coal production dropped in 1944, and plummeted in 1945 (see Table 2.2).

The electric power industry fared rather better than coal during the war, although thermal power stations became mainly inoperative due to intensive bombings and neglect of the equipment. But hydroelectric sites which were located in isolated rural areas largely escaped the destruction of the war. Therefore, the industry was able to meet the demands of the military and industry for electricity during the war years.

The Japanese petroleum industry, however, faced major problems during the war which had long term implications for the industry:

First, domestic production which had peaked at 351,000 kilo litres in 1935, dropped to 243,000 kl in 1945 (see Table 2.1) due to depleting oilfields and shortage of personnel. The shortage of workforce occurred as oil engineers and workers were transferred to the richer oilfields of Southeast Asia.²¹ However, as the sinking of oil tankers and ships by the Allied forces had greatly reduced the capacity of the Japanese merchant fleet, an acute dearth of oil supplies (among other raw materials) developed

in Japan. So, from the end of 1943, the Japanese desperately attempted, with little success, to revive domestic oil production. Similarly, their endeavour to develop oilfields in Manchuria, Sakhalin, Formosa, and other territories nearer to Japan suffered from the same problems of transport and did not help to satisfy Japan's oil demands. Inadequate supplies of oil became so serious towards the end of the war, that the Japanese Navy was forced into extracting flammable pitch from pine-tree roots under the slogan, "Two hundred pine roots will keep a plane in the air for an hour".²²

Dearth of oil supplies had handicapped the military to the point that training for pilots had almost stopped by the end of the war, and furthermore, more and more strategic decisions were being based on the availability of petroleum rather than military or political considerations. The lack of adequate oil supplies had become the Achilles Heel of Japan, as had long been recognised by both the Japanese and the Americans. The nightmare of the pre-war Japanese planners had come true: Japanese power was only as great as its supply of petroleum- and that could be withheld by the Americans.²³ As Table 2.1 clearly demonstrates, after the imposition of the oil embargo by the United States in 1941, imports of crude oil and petroleum products started to fall sharply, and came to an almost complete stop in 1945. This fact was not lost on the American occupiers and officials who realised that the best way to curb Japanese militarism and expansion in Asia was to control her oil supplies. (This point will be discussed in more detail in future sections).

The second problem that the Japanese oil industry faced during the war was the immense damage inflicted upon domestic refineries by U.S. bombings and the general disrepair of facilities. Oil refineries, which had been identified by the American as prime contributors to the Japanese war making machine, were particularly and heavily bombed,

so much so that American officials in charge of reparations found no refinery suitable for dismantling and transferring to war affected countries in Southeast Asia.

Finally, some statistics may help demonstrate the severe shortage of energy in Japan at the end of the war and beginning of the Occupation. By the war's end coal production had dropped to 36%, electric power to 66%, and oil imports to a meagre 0.004% of their pre-war peaks.²⁴ This severe scarcity of energy exasperated the harsh economic conditions which existed at the end of the war, and clearly, the revival of the Japanese economy was impossible without first finding a solution to the energy crisis.

Table 2.2: Coal Production in Japan, 1930-1960
(1,000 metric tons)

Year	Coal Prod'n	Year	Coal Prod'n	Year	Coal Prod'n
1930	31,376	1941	56,472	1952	43,359
1931	27,987	1942	53,540	1953	46,531
1932	28,053	1943	55,500	1954	42,718
1933	32,524	1944	52,945	1955	42,423
1934	35,925	1945	29,879	1956	46,555
1935	37,762	1946	20,382	1957	51,732
1936	41,803	1947	27,234	1958	49,674
1937	45,258	1948	33,726	1959	47,258
1938	48,684	1949	37,973	1960	51,067
1939	51,111	1950	38,459	*	*
1940	56,313	1951	43,312	*	*

Source: Japan Statistical Yearbook, Prime Minister's Office
1954, P.214, 1961, p.142

3.0- The Energy Industries During the Occupation Period

After the destruction of Nagasaki and Hiroshima by nuclear bombs, the Japanese were forced to accept the terms of the Potsdam Declaration, which ended the war, and gave the Allied countries the right to occupy Japan. The Occupation of Japan was almost exclusively carried out by the Americans, led by General MacArthur who set up his headquarters in Tokyo known as the Supreme Command for the Allied Powers (SCAP) or GHQ, although other Allied powers played no major part in it.

The Americans declared at the beginning of the Occupation that they would assume no responsibility for the revival of the Japanese economy which had been shattered by eight years of war in China and four years in the Pacific, and it was a matter for the Japanese government and people to tackle. SCAP officials announced, however, that they would take the necessary steps to end the excessive concentration of economic power in hands of zaibatsu and other oligopolies, and introduce free competition into the Japanese economy. Their decision was based on the argument that the concentration of economic power in a few zaibatsu, and their influence over the bureaucracy was an important factor in the rise of Japanese militarism and the subsequent invasion of Southeast Asia and, therefore, it was imperative for these oligopolies to be broken up as they were obstacles to a peaceful, democratic Japan.²⁵

The Americans adopted two policies to reform Japanese society in general and political and business institutions in particular. These two policies were *demilitarization* and *democratization*. These policies were to have a deep impact on all aspects of Japanese life and profoundly affected her future. They also had a great influence on the Japanese energy industries.

3.1- Demilitarization and Democratization Policies

Demilitarization and democratization policies of SCAP not only affected the military and political institutions, but more importantly, (from the perspective of the rise of Japan to an economic superpower) the economic and business institutions as well. Indeed many argue that the most long lasting influence of SCAP policies during the Occupation years were in the economic sphere. Demilitarization meant not only the disbanding of Japanese armed forces and repatriation of Japanese soldiers from the occupied territories, but also banning, or controlling those industries which had military significance. This policy was based on the belief that Japan had acquired its status as the most industrialised country in Asia by the economic exploitation of the countries it had invaded in the region, and she had to relinquish that position.

The best way to achieve this in the short-run, according to a report produced by a commission set up by the Americans in late 1945/early 1946, was to set up a reparation programme to transfer most of Japan's industrial plants and equipment to countries that had suffered as a result of Japanese aggression. This would not only compensate these countries for their losses, the commission members argued, but would also bring Japan's level of industrial development down to the average Asian and the 1930-1934 average Japanese standard of living.²⁶

In order to stem any future domination of the region either militarily or economically by the Japanese, the commission contemplated prohibiting the development of heavy industry in Japan and promoting an economy based on light industry, such as the manufacture of porcelain and toys made from indigenous materials, and export of these goods and also raw materials such as tea, silk, and lumber. The commission, nevertheless, recognised the need for Japan to export in order to be able to import some

essential goods, but it emphasised that imports must be limited drastically by increasing food production in Japan.²⁷

These recommendations were strongly opposed by Japanese officials and businessmen, who resisted its implementation for several years. With the start of the Cold War, and especially the Korean War, however, the United States began to consider Japan as her ally rather than foe and, as a result, made a drastic policy reversal towards the latter and actively supported the development of Japanese industry.

The oil industry is a good example of this policy shift. Oil was considered to be a strategic rather than an economic commodity, and a major factor in the Japanese invasion of Southeast Asia, and, therefore, liable to be affected by the demilitarization policy. So, from the beginning of the Occupation and for several years, the SCAP, with support from Washington, prohibited imports of crude oil into Japan, although the importation of petroleum products was allowed. Furthermore, the Japanese oil refining installations were targeted for reparations. This policy was, however, dramatically changed in 1948/1949, when the Americans not only freed crude oil imports (see Table 2.1), but actively supported the development and modernisation of the oil refining industry in Japan.

The democratization policy had political as well as economic objectives. In the political field, the policy introduced such reforms as the promulgation of a new constitution, which demoted the Emperor to a lesser status of the "symbol" of the state, and renounced war as a sovereign right of the nation. Other democratization measures initiated by the SCAP included the legalisation of leftist parties, universal franchise, bureaucratic reforms, purge of militarists, politicians, and officials, and reform of the education system, etc.²⁸

As discussed above, the Americans were not concerned with the shattered state of the Japanese economy at the end of the war, but with the excessive concentration of economic power in a few zaibatsu and other holding companies. Therefore, as a part of the democratization policy, the SCAP officials promoted various measures to end this concentration and introduce competition into the Japanese economy and, in general, change the business environment in Japan to an American style one. These measures included land reform, the establishment of rights for organised labour, economic deconcentration of industry, and a purge of businessmen who had co-operated with the military.

The economic deconcentration's aim was to democratize the Japanese economy and spread the principle of competition in all sectors of the industry. The policy tried to achieve this by dissolving the zaibatsu and other large holdings. The Americans believed that the excessive concentration of economic power in the hands of a few zaibatsu was an important factor in Japanese aggression in Southeast Asia and, furthermore, the great influence of these companies was a major obstacle to the development of political freedom in Japan and friendly trade with other countries.

On the basis of this thinking, in October 1945, SCAP officials ordered the four largest zaibatsu; Mitsui, Mitsubishi, Sumitomo, and Yasuda to dissolve. The scope of the dissolution was later on widened to cover any business enterprise that was considered to be an excessive concentration of economic power. Other important outcomes of this policy were the enactment of the Anti-Monopoly Law in April 1947, which led to the establishment of the Fair Trade Commission, and banning of all holding companies.²⁹

The deconcentration policy broke the Mitsubishi and the Mitsui zaibatsu into 136 and 175 smaller companies respectively, and furthermore, led to the fragmentation of the

Mitsubishi Shoji and Mitsui Bussan, the trading arms of their respective zaibatsu.

3.2- The Energy Industries and the Occupation Policies

The Japanese energy industries were probably affected more than any other by the Occupation reforms. The policies that influenced the energy industries most were the demilitarization, deconcentration and labour reforms.

All three energy industries: coal electric, and petroleum, as mentioned before, had been severely affected by the war, and the continuous shortage of energy at the end of the war was frustrating economic recovery. No revival of the Japanese economy was possible without first solving the energy crisis. Furthermore, the SCAP policies were posing various problems for these industries. SCAP officials wanted to change the energy mix in Japan so that the country would rely more on domestic sources: coal and hydroelectricity, and less on imported oil. This policy was based mainly on strategic rather than economic considerations, as oil was not yet an important source of energy for Japanese industry, but had major military significance. The Americans believed that access to the sources of overseas oil was a prime factor in the Japanese invasion of Southeast Asian countries, and they were hoping that by the banning of crude oil imports into Japan (although allowing for the importation of some oil products), and forcing the Japanese to use their indigenous sources, they would be able to curb future Japanese aggression in the region.

3.2.1- The Coal Industry

The demilitarization policy, in a peculiar way, had a positive affect on the Japanese coal industry. The industry was considered by the SCAP not to have had any links with Japanese domination of the Southeast Asia. Furthermore, domestic coal, in its opinion, was a means of making Japan self sufficient (in addition to hydroelectricity) in

energy, and hence, reducing the risk of future Japanese adventures in the region. This energy mix, in SCAP officials' opinion, was adequate to meet the demands of the Japanese economy based on light industry.

Based on this thinking, the SCAP officials made coal production the main focus of their economic programme from the very early days of the Occupation. In two directives issued in September 1945, they asked the Japanese government to do everything within its power to boost domestic coal production which had fallen sharply by the end of the war/beginning of the Occupation.³⁰ The government followed these directives by raising wages and other incentives for mine workers, and took steps to facilitate production and transportation of coal. Nevertheless, SCAP thought these measures inadequate, and on several occasions sent harsh communiqués to the Japanese government criticising it for its lacklustre attitude. These measures did help coal production to rise gradually from January 1946 onwards.³¹

The economic deconcentration and labour reforms had as much, if not more effect on the coal industry. The former led to the division of Mitsui, Mitsubishi, and Sumitomo mining companies into separate coal and metal mining businesses. This greatly reduced the profitability of the three industry leaders which used to use incomes from either enterprises to help the other in times of difficulty. Probably, the more serious impact of the deconcentration on the coal industry was the dissolution of Mitsui Bussan and Mitsubishi Shoji. These two trading firms not only bought coal from their own group's mining companies, but also acted as distributors for many smaller mining firms. With their disappearance, the coal distribution system was severely disrupted, and small companies found it difficult to sell their coal.

Of all Occupation reforms, the labour reform was the one which radically

transformed the Japanese coal industry. From the establishment of the coal industry in Japan in Tokugawa Shogunate until the end of the Second World War, the industry relied heavily on massive exploitation of labour to extract coal from otherwise small and unprofitable mines. (There were many large mines as well, like the Mitsui's Miike, and they too relied on very cheap labour). Coal miners were so cheap, to the point of almost zero cost to mine owners, that the latter refused for many decades to invest in the mechanisation of mines, or to use modern mining techniques. The conditions of mine workers were so bad in Japan that, on several occasions before the war, international labour organisations made strong protests to the Japanese government. But as mine owners were the most powerful businessmen in Japan, these protests did not have much effect on the workers' lives. As a matter of fact, with the invasion of Southeast Asia, exploitation of miners intensified as colonial workers and POW's were brought in to work in the mines.³²

Considering these harsh conditions, it was, therefore, no coincidence that after the introduction of labour reforms by the Occupiers which legalised unions and gave many rights to the workers, that the miners were the first group to form unions and ask for a fairer return for their labour. This newly gained right gave mine workers strong bargaining power vis-a-vis their employers, and changed the economics of coal mining in Japan for good.

3.2.2- The Electric Industry

SCAP had two rather different sets of policy on the Japanese electric power industry. Hydroelectricity was singled out for further development for the same reason as domestic coal. It relied on Japan's most abundant natural resource: water, and

therefore, an indigenous energy source which would reduce the risk of future Japanese aggression in the region.

In contrast, about half of the thermal power stations were designated to be shipped overseas as part of the reparations programme, since, in the American officials opinion, a smaller economy would not need so much power. The electric industry leaders vigorously resisted the dismantling of their plants, which they insisted were essential to the power system.³³ However, huge increases in demand for electricity both from households and industry, and acute power shortages, plus the fact that the American policy towards Japan had shifted to the economic development of the latter, led the SCAP in 1949, to approve plans for the major development of the electric power industry, including the thermal plants.

The deconcentration policy had a severe impact on the industry, as all electric power companies were designated as excessive concentration of economic power and, hence, liable to fragmentation. An intense debate ensued over the structure of the industry, and finally, in May 1951, nine private electric companies were created.

Electric power industry employees, were among the first group of workers to establish unions, and by the end of 1947, 67% of them had organised themselves into unions. One important aspect of this unionisation was that as there were only major 10 electric companies (before being reorganised into 9 by SCAP reforms), and the unions were enterprise unions, the workers gained strong bargaining positions against their employers. The electric workers used this strength to demand higher wages and better working conditions for themselves as well as a say in national economic planning. This created a hostile environment which hampered the early development of the industry.

The Occupation reforms delayed the early development of the electric power

industry, which had been damaged by the war. So when in the late 1940s/early 1950s the economic boom created by the American shift of policy toward Japan and the Korean War increased demand for electricity, a severe shortage of power developed and was not resolved until 1962.

3.2.3- The Petroleum Industry

The demilitarization policy affected the Japanese oil industry more than any other. It could even be argued that the policy was initiated in the first place to deal with the petroleum industry which, in the Americans' opinion, had strategic rather than economic significance. In fact they (the Americans) were right on this point. Petroleum had not played an important role in pre-war and war-time Japanese economy, supplying at most 10% of her energy requirement, with the military and especially the Imperial Navy consuming most of it. Moreover, the Americans believed that the paucity of indigenous oil resources (as well as coking coal) had led Japan to invade the Southeast Asian countries which were rich in these strategic sources of energy. The most abundant sources of oil and coking coal in the region were the Dutch East Indies and Manchuria respectively, and these were the countries (among others) that the Japanese invaded in order to secure a stable supply of these two vital commodities. Based on these considerations, SCAP decided to slash Japan's war making potential and remove any chances of her future aggression in the region by severely curtailing and controlling the Japanese oil industry. The question of oil supplies to Japan was so paramount in U.S. strategic thinking that SCAP oil policy making was assigned to a civilian body attached to G-4, a military unit, rather than to the Economic and Scientific Section which was in charge of coal, electric, and other industries.³⁴

As a result of these strategic considerations, in October 1945, SCAP banned crude oil imports to Japan, and ordered that all of her Pacific refineries must cease operations once the crude oil already in stock had been refined. They, however, allowed refineries on the Sea of Japan Coast to stay in business to process domestic crude.

SCAP limited Japan's refining capacity to the level of the domestic crude production, and earmarked the excess capacity for reparations. The war time bombings, however, had destroyed around 85% of refinery installations in Japan, and the remaining facilities were in a very bad state due to neglect and outdated technology. So much so, in fact, that the SCAP officials in charge of reparations found no refinery worth transferring abroad.

Under the economic deconcentration policy, SCAP, in the space of four months, from October 1945 to January 1946, dismantled most laws and controls regulating the oil industry. The Petroleum Industry Law which had been the linchpin of the oil industry from 1934 to the end of the war, was abolished in December. Furthermore, most oil firms were designated as being excessively concentrated in early 1946, and many of the industry's top executives were purged. Imperial Oil, however, was not affected at that time, as it was producing more than 98% of Japan's domestic crude, and was the only company capable of increasing indigenous oil production and, hence, compatible with the Americans strategy of making Japan reliant on her domestic sources of energy.

Imperial Oil was not, however, successful in its endeavour to boost domestic production because of shortage of personnel and lack of adequate exploration activities. To make matters worse, in February 1948, Imperial was designated an excessively concentrated firm, and was required to dispose of its shares in other companies, and release all of oil fields not under active exploration. Furthermore, the Finance Ministry

was asked to reduce its holding in the company.

SCAP labour reforms did not have much influence on the petroleum industry, as it did not employ large number of workers. The only labour unrest in the industry took place in March 1948 by repatriated personnel working for Imperial oil, which forced the SCAP to intervene and was ended by the sacking of 3000 employees.³⁵

It is critical at this juncture to evaluate the SCAP and, generally, the American policy towards the Japanese oil industry, as these policies are regarded by many as being very instrumental in forming the structure of the industry in postwar Japan, and even a factor for its weakness.

There were two sets of people, or groups, who made decisions on the Japanese oil industry affecting both its short and long term prospects. These two were the U.S. State Department officials who were interested in the industry from a strategic perspective, and SCAP, which was in charge of day to day running of it. There was close coordination between the two, and the latter followed the former's instructions, although some disagreements arose from time to time. Furthermore, on several occasions, private individuals and companies were commissioned by either of the two to prepare reports or make recommendations on the Japanese petroleum industry.

An important point which needs to be mentioned here is the composition of the SCAP's unit which was in charge of the oil industry. As mentioned above, in October 1945, SCAP set up a unit called the Petroleum Advisory Group (PAG) to deal with issues regarding petroleum supplies. This body was made up entirely of representatives of major international oil companies, some of which had owned substantial oil businesses in pre-war Japan. To be exact, PAG had the following composition: three from Stanvac, four from Shell (parent of pre-war Rising Sun in Japan), and one each from Caltex,

Tidewater (pre-war partner in Mitsubishi Oil), and Union Oil.³⁶ As the list demonstrates, the American oil interests almost totally dominated the PAG. The only exception was Shell (the Anglo-Dutch oil company), whose British delegates were allowed to join the PAG as an exception to policy limiting SCAP jobs to Americans.³⁷ What's more, the salaries of these executives were being paid by their own companies while on loan to the SCAP.

Hein (1990), Samuels (1987), and Roberts (1971) argue that the commercial interests of the foreign (American) oil companies comprising the PAG did have a profound effect on the Japanese petroleum industry in the short and long term. Furthermore, they all state that the U.S. official policy on Japan seems to have closely followed the wishes of the Majors.³⁸ They site as evidence for their arguments the radical shift in American policy in 1948 in which SCAP not only reversed its earlier policy of banning crude imports to Japan, and ended the reparation and closing down of oil refineries, but enthusiastically supported the development and modernization of the petroleum industry in Japan. This shift in policy looks to have closely followed the change in the global strategy of international oil companies.

For example, from 1945 to 1948, when no large international markets existed for petroleum products, and large oil companies were "long"³⁹, they, through their representatives on PAG, persuaded the American (or SCAP) officials to close down most of Japan's refineries, and ban imports of crude oil into the country.

From 1948 onwards, however, the international oil markets began to tighten, and especially the U.S., the principal supplier of oil products to Japan, became an importer of oil herself. Furthermore, with the discovery of huge oil reserves in the Middle East (which were under the control of Majors), and construction of larger oil tankers, it was

cheaper for the Majors to transport this crude to, and process it at the point of consumption.

By that time (1948), Japan had become an attractive country for the locating of oil refineries. First, her domestic market was expected to grow substantially in the next few years (which it did), and as she had very small foreign exchange reserves, it made sense to international oil companies to build refineries there to process the Middle Eastern crude.

Secondly, Japan was politically the most stable country in Southeast Asia and, with the civil war in China and other parts of the region, she was the safest place for the American capital. With building refineries in Japan, the oil companies reasoned, they could not only supply her domestic market, but also other countries in the region.⁴⁰

Finally, the start of the Cold War, coupled with social and political changes that had taken place under the Occupation, forced a U-turn on U.S. policy towards Japan. She was no longer considered as an enemy, but as an ally of the United States. This qualified Japan for economic assistance from America, which she had been denied until then. Indeed, from then on, the revival of the Japanese economy became a priority for the SCAP.

Considering these developments, the American oil companies reversed their strategy on the Japanese petroleum industry, and actively supported its expansion and modernisation, provided they were given the lion's share of the market. This change of attitude was translated into a new official U.S. policy towards the Japanese oil industry.

In January 1948, General MacArthur announced that the Japanese oil industry would be revived, and in February all eight major refining companies were designated excessively concentrated firms. Next month the Strike Report was issued which warned

of the dangers of an economically weak Japan, and recommended that the reparations programme should stop. It also advocated the scrapping of refining installations and imports of petroleum products by oil companies. Soon after, the Johnston report came out, which argued against the dismantling of refineries, and called for their modernisation and expansion.⁴¹

The American concerns over Japan's access to oil reserves had by no means diminished. With this new policy, they had merely shifted their control over the Japanese oil industry from downstream to upstream. The United States was prepared to allow Japan to import as much oil as she wanted, provided she had no control over oil reserves. They believed that there was no security problem as long as Japan had no access to major reserves of overseas oil. This meant that the Japanese oil industry could develop downstream but not upstream. This statement can be supported by remarks of George Kennan, a State Department official, who in October 1949 pronounced:

"If the United States created controls... foolproof enough and cleverly enough exercised really to have power over what Japan imports in the way of oil and other things as she has got from overseas, then we could have veto power over what she does need."⁴²

These remarks suggest a possible long term agreement between the American government and the international oil companies to deny Japan access to sources of oil outside her territory.

This state of affairs benefitted the major oil companies as well. With the discovery of huge deposits of oil in the Middle East, the Majors were looking for outlets that could consume a large portion of their production from these oilfields, and Japan was the best market. Furthermore, with the international oil markets glutted, they (the Majors) did

not want others (like the Japanese) to develop more oilfields and destabilise the market.

This new development in the U.S. policy was not lost on the Japanese oil companies, who saw co-operation with foreign capital as the only means of survival. The international oil companies were prepared to provide capital and technology to otherwise defunct Japanese refineries whose facilities had been almost totally destroyed by the war and neglect. So once permission was granted by the SCAP in July 1949 for the development and modernisation of the oil industry, the Japanese petroleum companies rushed to conclude agreements with American (Shell being the only exception) oil companies. The patterns of the agreements were almost the same: foreign companies agreed to supply crude on a long term basis, plus technology and capital for the construction of new refineries and oil storage facilities in exchange for a controlling (usually 50%) stake in the Japanese oil firms (see Table 2.3). As soon as Japanese oil companies reached agreements with their foreign partners, they were removed from the list of excessively concentrated firms, and were allowed to re-open their Pacific Coast refineries.

Rebuilding of the refineries proceeded quite quickly and, by the end of 1951, crude throughput was greater than the pre-surrender peak, at 94,539 barrels per day, and oil refining became one of Japan's most technologically advanced industries.⁴³ This was made possible, because unlike most other industries, the oil refiners had access to plentiful and endless capital from the international oil companies.

Thus, the petroleum refining industry became the first and the most important industry in postwar Japan to attract foreign capital, receiving 65% and 30% of all foreign investment in 1951 and 1952 respectively, and no other industry has, since then, come closer to its degree of domination by foreign interests.⁴⁴ The dominance of

overseas capital in the oil industry has remained strong even today when Japan has acquired economic superpower status.

Finally, in April 1951, SCAP handed over the responsibility for oil policy to the Ministry of International Trade and Industry (MITI). The Treaty of San Francisco, signed in September 1951, formally ended American control of the oil industry. Japanese companies, however, continued their relations with the international oil companies in order to ensure a stable supply of oil for their refineries.

Table 2.3: International Oil Companies' Capital Participation in Japanese Refining Companies (December 1952)

Company	Affiliated With	Ratio (%)	Affiliation Date
Mitsubishi Oil	Tidewater Oil	50	February 1931(a)
Toa Nenryo	Standard-Vacuum	55	March 1949
Koa Oil	Caltex Oil Products	50	November 1950
Nippon Petroleum Refining	Caltex Oil	50(b)	May 1951
Showa Oil	Anglo-Saxon Petroleum (Shell)	50	December 1952

Source: Hein (1990) p.212.

Notes: (a) Reaffirmed March 1949.

(b) Other 50% is held by Nippon Oil.

3.3- The Rationalisation Policy and the Energy Industries

The rationalisation policy which was introduced by the Japanese in 1949 in response to the American austerity measures, involved using technological advances to improve both domestic standards of living and industrial productivity.⁴⁵ Initially, two industries, namely steel and coal, whose recovery and modernisation were considered to be essential to any general economic recovery were chosen for rationalisation. The policy did have some effects on the steel industry, but almost completely failed in the case of the coal industry.⁴⁶ The rationalisation policy in the energy industries in general meant the expansion of domestic coal and electric power, while relegating petroleum to the secondary position as a service to other more important industries.

With the adaptation of the rationalisation policy, Japanese officials hoped to increase the international competitiveness of Japanese industry by introducing new technology, and providing low cost materials including energy while keeping wages reasonably high. The coal industry was to supply industry with a plentiful and cheap source of energy and at the same time save on scarce foreign exchange.

However, due to several factors, some of which were outside the industry's control, coal failed to respond to the government's rationalisation measures and began to lose its market to other sources of energy, especially oil. (See Table 2.4). First, there was the problem of depleted reserves. Secondly, there was the issue of low quality Japanese coal which was not suitable for the steel industry. Thirdly, due to the lack of earlier investments in mines and mining techniques, the price of Japanese coal was far higher than American and European prices (or indeed higher than international markets' prices). Finally, the antagonistic relations that had developed between the miners and operators since the end of the war was causing disruptions to a stable supply of coal to

its major consumers. The long and protracted miners strike of 1952, especially, convinced coal users that the industry was not able to supply them with a stable and cheap source of energy. This happened at a time when oil prices were plummeting in the world markets, and the petroleum companies were offering a plentiful, secure, and high quality source of energy.

The rationalisation policy which started with the coal industry, and the revival of domestic coal production at the centre of its plans, exposed the fundamental weakness of the industry. As a result, during the 1950s more and more coal consumers switched to oil, and the long slide of coal began (see Table 2.4). Perhaps the biggest contribution of the rationalisation policy to the Japanese economy was the energy revolution that it ushered by facilitating the switch from coal to oil. On the contrary, the oil industry which was neither targeted by the government for expansion, nor was offered special incentives under rationalisation became a leading sector of the economy, and contributed greatly to the rapid growth of other industries and the Japanese economy in general.

The electric power industry which had been handicapped by reorganisation disputes until the early 1950s, began to modernise and expand from then on, although its success was due more to other unanticipated factors rather than the rationalisation policy.⁴⁷

In the early 1950s, with the active encouragement of U.S., the Japanese officials and business leaders began to promote the development of heavy and chemical industries. The Americans wanted to make Japan the powerhouse of Asia as a way of containing communism in the region, and this necessitated the development of heavy industry. The Korean War provided both the Americans and the Japanese with an impetus to carry out their plans. The Americans, with their military purchases for the

war, provided the Japanese with the market, technology, and the foreign exchange to develop their industries, particularly heavy industry. Heavy industry, however, needed plentiful and cheap energy, something that the petroleum industry was able to provide but the coal industry, for the reasons mentioned above was incapable of. It was from then on, that the importance of oil to the Japanese economy grew year by year, and finally, in 1962, it became the dominant source of energy for the Japanese economy. There were, nonetheless, other factors for the rapid expansion of the heavy and chemical industries in Japan and these will be discussed in future sections.

Table 2.4 Japan's Primary Energy Supply Structure (%), 1935-1960

Year	Hydroelectric	Domestic Coal	Imported Coal	Petroleum	Other
1935	18.1	52.5	9.2	10.4	9.8
1940	16.1	54.2	12.0	7.0	10.7
1945	32.7	48.1	0.9	0.9	17.4
1946	40.6	42.1	-	2.1	15.2
1947	35.5	45.8	0.2	3.7	14.8
1948	33.6	46.2	2.7	4.5	13.5
1949	34.3	48.4	2.1	4.3	10.9
1950	32.7	49.6	1.6	6.2	9.9
1951	28.3	50.5	3.6	8.7	8.9
1952	28.9	45.9	5.4	11.4	8.4
1953	29.4	43.5	5.2	13.7	8.2
1954	30.2	41.7	3.8	16.5	7.8
1955	30.5	40.3	3.7	17.9	7.6
1956	29.0	40.3	4.2	19.7	6.7
1957	27.8	38.9	5.5	21.6	6.2
1958	30.3	36.8	4.1	22.5	6.3
1959	27.6	32.2	4.7	39.4	5.1
1960	22.7	31.9	6.2	34.7	4.5

Source: Hein (1990), p174.

Note:"other" consists of lignite, natural gas, charcoal, and firewood.

4.0- The Petroleum Industry in the 1950s

As noted before, the SCAP in April 1951, handed over responsibility for the oil industry to the MITI. Before this change over, however, the former had dismantled all laws and regulations relating to the industry in the hope of creating a free market in the industry (as well as preparing the ground for the domination of the industry by American oil companies), and so when MITI took over the supervision of the petroleum industry, it had no means of regulating it. But MITI used a completely unrelated law, namely the Foreign Exchange and Foreign Trade Control Law of December 1949 to manage the oil industry. This law empowered the government to establish an annual foreign exchange budget in order to protect its balance of payments, and MITI was put in charge of implementing it. The Foreign Exchange Law gave MITI what Johnson calls "absolute control over the use of all foreign means of payment".⁴⁸ As almost all of Japan's oil requirements had to be imported, the law provided MITI with unprecedented control over the petroleum industry in several ways. First, as MITI considered oil as a service to other industries rather than an industry on its own right, it employed a complex currency allocations system to ensure that oil became one of the cheapest factors of production for the consuming industries. (Although this point is disputed by others who argue that MITI raised tariffs on imported oil on several occasions, and therefore, the price of oil was not a major consideration to the Ministry.)⁴⁹

Secondly, as MITI was concerned with the domination of the Japanese oil industry by a few large international (mainly American) petroleum companies, it used the Foreign Exchange Law to weaken the industry by allowing many independent Japanese oil companies (i.e not affiliated to foreign firms) to enter the refining business, thereby creating a competitive environment in the sector. The Japanese independents which had

no long term agreement for the supply of crude with the Majors, used their foreign exchange allocations to buy the cheapest oil available on the spot markets and, hence, put further pressure on the price of oil products in the domestic market. The price wars that emerged as a result of the intense competition between the petroleum companies made conversion to oil more and more attractive to industries which were using coal as a source of energy or raw material (e.g. fertiliser manufacturers).

At the same time, however, two other developments were speeding up the transformation of the Japanese economy to an oil based industrial structure as well as accelerating the demise of the coal industry:

First, the new technology that was being rapidly introduced into Japan at that time was American and based on oil. Japanese industrialists who realised that oil was much more efficient than coal in terms of price and burning quality eagerly started to convert their machinery and technology to run on oil.

Secondly, with the launch of the petrochemicals as a national policy industry in July 1955, the Japanese, probably not realising its long term implications at the time, committed themselves to an economy based on oil. The petrochemical industry which uses higher octane oil products like naphtha and liquid petroleum gas (LPG) required rapid development of the refining facilities, and the refinery operators responded with enthusiasm. They applied for and received permission to build petrochemical facilities alongside their refineries. This way, they could apply for and receive more foreign currency allocations for the importation of larger volumes of crude oil (as well as receiving other incentives related to the petrochemical industry), and at the same time find an outlet for their surplus petroleum derivatives.

These developments were undermining the very existence of the coal industry, as

well as undercutting the goals of the rationalisation policy for the industry. From around 1954, coal-mine owners who enjoyed considerable political clout, in conjunction with miners unions, began to lobby for the protection of the industry. Both sides argued that as oil supplies were coming from overseas resources under the control of international oil companies and foreign governments, and especially as the Japanese petroleum industry was dominated by international majors, it was in Japan's national security interest to protect the domestic coal industry. They also cited regional destitution if coal mines were to be closed as a result of the competition from foreign oil. Their contentions that coal was as competitive as oil in terms of calorific value, however, did not gain any grounds with the officials and business leaders, and so the mine operators relied primarily on the first two arguments to ask for the protection of their industry.

The mining industry's lobbying for protection initiated an energy debate within Japan which questioned the rationality of letting imported oil become the major source of energy, and of allowing the domestic coal industry to shrink to the point where it would no longer be able to supply a major part of the country's energy requirements. This debate resulted in the 1955 energy settlement and the enactment of the Boiler Law of 1955 which restricted the conversion of coal burning facilities to oil. The law also provided various measures for closing down small and uneconomic mines and gave subsidies to large mines for modernisation under the "scrap and build programme".

The Boiler Law's guidelines were not strictly adhered to by both the MITI and the industry as the former gave permission for the construction of ten oil burning power stations in late 1950s, and the latter continued with its adaptation of oil based technology.

Although the coal industry and its customers had conflicting interests, they agreed,

for their own reasons, on one point. They both opposed the formation of a powerful cartel in the oil industry and therefore, they supported MITI's policies to keep the petroleum refining industry crowded and fragmented.

Another component of the 1955 energy settlement was the commitment to atomic energy. The policy was to rely primarily on coal, use petroleum for the short term and develop atomic power for the long term. Notwithstanding, this policy did not succeed for several reasons. First, as noted above, coal failed to respond to the rationalisation measures and, as a result, lost its position as the main source of energy. Secondly, the development of independent atomic energy was very slow. The Japanese had originally planned an ambitious nuclear energy programme. But financial and technical problems dampened their expectations, and by the late 1950's, they realised that nuclear energy was a long term solution, when an immediate solution was needed to the problem of sudden decline in coal production. Finally, the gradual decline in oil prices (see Table 2.5 for the average value of crude oil in Japan), and dramatic discoveries of oil reserves in the Middle East made the Japanese realise that oil was the best solution to their persistent energy problems, in spite of its implications for dependence on foreign sources of energy and governments and international petroleum companies.

Even in those early days of conversion to petroleum, the Japanese were concerned about the security and stability of oil supplies. Furthermore, they were worried that the rapid increase in the world consumption of petroleum would lead to the early depletion of oil reserves.⁵⁰ Their fears over the security of supplies materialised in 1956, when as a result of the Arab-Israeli War and the closure of the Suez Canal, oil supplies to Europe were temporarily cut off. Their worries over dwindling reserves were unfounded as huge oilfields were discovered in the Middle East and other parts of the world.

Table 2.5: Average Value of Landed Crude In Japan

Fiscal Year	C.i.f value	C.i.f value	Exchange rates
	\$/barrel	yen/kl	yen/\$
1956	3.23	7,333	360.00
1960	2.30	5,213	360.00
1965	1.97	4,488	360.00
1970	1.83	4,147	360.00
1975	11.36	22,142	296.87
1980	32.27	47,206	227.65
1981	37.29	51,387	219.10
1982	35.00	54,383	247.28
1983	30.73	45,861	237.27
1984	29.36	43,713	236.66
1985	28.07	42,373	239.97
1986	16.40	18,169	176.12
1987	17.78	16,550	145.89
1988	15.60	12,550	127.93
1989	16.71	14,450	137.47

Source: Tetsuo Hamauzu (1993), p.70.

In order to lessen reliance on overseas resources, MITI took steps to increase the domestic oil exploration and production. After much wrangling with the Ministry of Finance and private oil companies over the finances and structure of a new body with the responsibility to strengthen the domestic upstream activities, MITI succeeded in the creation of the Japan Petroleum Exploration Company (JAPEX) in July 1955 by an act of the Diet. JAPEX was a national policy company modelled after the wartime Imperial Oil Company, and was owned equally by the state and the private sector. The reorganised Imperial Oil was the largest private shareholder and the refining firms

comprised the rest of the equity holders.⁵¹

JAPEX began operations in December 1955 and produced its first domestic crude in 1958. The corporation, however, did not succeed in substantially increasing domestic production as originally hoped and, at its peak in 1962, domestic crude production satisfied only 2% (including non-JAPEX production) of Japanese total oil demand.

In 1960, JAPEX announced plans to extend its activities to overseas fields, which would have required substantial infusion of capital. The refining companies which had by that time realised that JAPEX would not be able to supply them with large amounts of crude and, further, believed that it was more profitable to spend their capital on refining expansion rather than on risky JAPEX adventures in overseas exploration,⁵² announced that they would cease capital cooperation with JAPEX after 1961. Plentiful crude oil was available from the Majors and, furthermore, refiners feared that JAPEX activities may jeopardise their relations with them.

In the meantime, an entrepreneur, Taro Yamashita, who had connections with the pre-war military, and was concerned with the security of oil supplies, decided to seek overseas oil resources under Japanese control. Consequently, he reached agreements with the governments of Saudi Arabia and Kuwait to explore the Neutral Zone between the two countries and eventually discovered oil in the Khafji field. Upon finding oil there, he established the Arabian Oil Company (AOC) in 1958 and started production in 1960. His arrangements with the Kuwaitis and the Saudis for profit sharing was revolutionary for the time, as he gave them 57% and 56% of all profits (including transport and refining) respectively, at a time when 50% of profits on the oil production alone was the best oil producing countries could expect.⁵³

Yamashita, nevertheless, had great difficulty in finding finance for his venture as

neither oil companies nor the Japanese government were willing to back him up (although both Caldwell and Brown argue that strong behind-the-scenes support existed within the MITI).⁵⁴ However, at the urging of the Keidanren chairman, Ishizaki, Yamashita received considerable backing from the electric power companies and the entire Japanese financial community.

As the JAPEX and Yamashita cases show, the Japanese, particularly the oil industry, were not very concerned with the issue of national control of the petroleum resources and supplies in the 1950s. For example, the Japanese refining companies did not make any serious efforts to move into the upstream activities of exploration and production overseas during that decade. Lack of capital was a handicap which prevented them from doing so. Only few years had passed since they had been allowed to resume their operations and, hence, they had not had enough time to accumulate enough internal capital. More importantly, the intense competition that had been spurred on by the MITI was forcing them to invest all their capital in refining and distribution capacity expansion. Therefore, they were not in a strong enough financial position to engage in the risky business of exploration and production abroad. In fact, this lack of capital, coupled with outmoded refining technology, had forced them in the late 1940s/early 1950s, to enter into long term agreements with international oil companies for the supply of crude. Hence, they had no worries about inadequate crude supplies. Moreover, as a part of the Majors', or probably even the American strategies, the Japanese were not persuaded or even allowed to move upstream.

Besides, as discussed in previous sections, with the creation of the Imperial Oil Company in 1941, the separation that had long existed between the upstream and downstream sectors of the oil industry was formally recognised and continued after the

war, even strengthened by the SCAP's policy. This division still exists today in the Japanese oil industry.

Another important factor was that, traditionally, major Japanese financial groups had invested in coal mining and considered oil as a competitor, and therefore avoided investing in the industry. However, when oil began to become the dominant source of energy, these groups began actively to invest in petroleum refining.

Finally, with the discovery of huge oil reserves in the Middle East and plummeting oil prices, exploration and production by the relatively inexperienced Japanese was a risky business. There were no major oilfields left to explore any way, as almost all of the promising areas of the world had already been assigned to the international oil companies under the "concession system".

5.0- The Petroleum Industry in the 1960s

1960 was an epoch-making year for Japan. It was the beginning of the high growth decade and the energy revolution. By that year, Japanese bureaucrats and businessmen had recognised that oil would soon become the dominant source of energy and coal would lose its pivotal position, and that is exactly what happened. Between 1961 and 1973, the year of the first oil crisis, petroleum consumption nearly quadrupled, increasing over 11% annually. Gasoline sales increased 400%, and oil's share of Japan's primary energy supply increased from under 40% to almost 80%.⁵⁵ (See Table 3.11 for Japan's oil consumption from 1950 to 1989.)

This major shift in Japan's energy mix provided a great opportunity for the Japanese refining companies to expand capacity and for the new ones to enter the market (see Table 2.6 for the expansion in the Japanese refining capacity in the 1950-

1990 period). This boom in investment and the intense competition that ensued, fragmented the oil industry even more, and caused the domestic oil companies to plunge deeper into debt. For example, in 1961, the Japanese oil refiners could provide for 56% of construction costs from internal funds, but only 36% in 1963 and a meagre 15% in 1964.⁵⁶ This situation created an opportunity for American oil companies, which were more than willing to supply funds to capital starved refining companies, to increase their domination of the Japanese oil industry. Indeed, by the early 1960s, the difference between affiliated and non-affiliated companies had become one of degree rather than of kind. For instance, by 1962, the foreign petroleum companies held long-term supply contracts for 90% of Japan's crude oil imports, had a major interest in about 75% of her refining capacity, and owned 25% of the industry directly.⁵⁷ Also, during this decade, the share of the Middle Eastern crude (supplied by majors) in Japan's total oil imports strongly rose and reached 90% of the total (see Table 3.11).

Table 2.6: Japanese Crude Oil Refining Capacity (barrels/day)

Year end	Crude distillation	Catalytic reforming	Catalytic cracking	Direct desu'n*	Indirect desu'n*
1950	90,000	--	--	--	--
1955	285,000	10,300	12,100	--	--
1960	743,490	41,450	48,800	--	--
1965	2,057,640	198,500	79,100	--	--
1970	3,668,800	358,800	175,600	112,760	256,000
1975	5,860,360	593,800	329,100	289,000	910,500
1980	5,940,360	578,300	358,600	459,000	981,700
1985	5,940,350	571,500	441,000	459,000	928,200
1990 +	4,551,000	591,900	649,600	414,000	166,080

Notes: *- Direct and Indirect Desulphurisation.

+ - Figures for March 1990.

Source: Tetsuo Hamauzu (1993), p.64.

This almost total dependency on foreign sources of oil, and particularly the dominance of the market by a few large foreign companies, was causing great concern to the Japanese government and especially the MITI officials over the security and stability of supplies.

To make matters more complicated, the International Monetary Fund (IMF), asked Japan in 1960 to implement Article IV of the Fund and liberalise her foreign trade in order for her to be accepted as a full member of the Fund. This meant that the Foreign Exchange Control and Foreign Investment Law of 1949 had to be abolished. There was by then, however, no problem with shortage of foreign currency, thanks to a rapidly growing overseas trade. But, as discussed before, this law had, throughout the

1950s, given MITI great power over the oil industry and it had used it to spur competition in the industry and nurture the domestic refining companies. Rather, MITI was concerned that liberalisation without protection would seriously undermine the weak Japanese oil industry, and would lead to the total domination of foreign capital. Therefore, MITI felt that it needed some form of control over the oil industry in the free trade era.

To find a solution to the above problems, MITI formed the Energy Roundtable in August 1961 to advise it on issues regarding oil. The committee reported back in December 1961, offering two alternatives: creation of a national oil champion like ENI of Italy/CFP of France, or the promulgation of a new petroleum industry law.⁵⁸

The report countered strong opposition from the business community who argued that the establishment of a state owned oil company was an encroachment of the free trade principal. The strongest resistance came from the domestic oil companies, both upstream and downstream, which saw the proposed national champion company as a means of consolidation of and the state control of the industry. So did foreign oil companies which regarded it as an attack on their presence in the Japanese market.

MITI was divided over the issue as well. The section which was in charge of the refining industry opposed the formation of an integrated company, while the section responsible for oil exploration and production supported it. The oil industry was, however, split over the second proposal: i.e. the introduction of a new industry law, and some firms believed that the new law would protect them against the onslaught of foreign companies after the liberalisation.

After intense debate within the government as well as with the industry, MITI dropped its plans for the creation of a national oil champion, although it was still

committed to the creation of one, and instead opted for a petroleum industry law.

The second Petroleum Industry Law (PIL) which was modelled almost directly on the 1934 law, was passed by the Diet on 5th May 1962 and, like its predecessor, gave MITI wide -ranging powers over the industry including: oil imports, licensing authority over refinery construction and expansion, refinery production, the domestic marketing and pricing of refined products, allocation of market shares, mergers and acquisitions. MITI was also required to draw up an oil supply plan for each year.⁵⁹

One important concession of the PIL to the industry was the creation of the Petroleum Council, an advisory body attached to the MITI, made up of industry representatives. MITI was to base its projections for demand and allocation of market shares on the advice received from the Petroleum Council. MITI was, nonetheless, frequently challenged by the oil industry represented on the Council over its allocation of the market shares, and some in the industry blamed the Law for the problems that afflicted the industry.⁶⁰

Although some argue that the PIL succeeded in its aim of enhancing the position of the domestic companies vis a vis international oil companies, Caldwell states that it merely protected the status quo.⁶¹ Under the PIL, expansion of the domestic firms was given priority over the foreign affiliated ones. However, it did not stop the latter from increasing its capacity before the implementation of the Law. By 1974, under the protection of the PIL, domestic firms had expanded their capacity by 516.1% while foreign affiliated ones had increased theirs by 374.5%. (See Table 2.7). It should be remembered that almost all of this expansion took place during the high growth era, at a time when demand for oil products was increasing by 11% per annum. This rapid expansion however, exposed the weakness of the domestic oil firms during the high price

oil period that followed the first oil shock. In fact, the foreign affiliated companies fared better than domestic ones.

Furthermore, the divisions within MITI, as well as the historical separation between the upstream and downstream sectors hindered (up to today) the accomplishment of the main aim of the PIL: i.e. the consolidation of the downstream and upstream sectors of the Japanese oil industry. These divisions reached such a point that the Arabian Oil Company was refused a licence to build and operate its own refinery in Japan and the existing refineries were refusing to buy the AOC's crude beyond a token level.

Table 2.7: Changes in Licenced Japanese Refinery Capacity
(Unit = 10,000 barrels/day)

	Capacity		Growth Rate
	Before PIL	1974	
Domestic Firms	48.25 (8)	297.25 (15)	516.1%
Foreign Affiliates	64.90 (9)	307.95 (13)	374.5%
Total Refineries	113.15 (17)	605.20 (28)	434.9%

Source: Petroleum Association of Japan.

Note: Number of firms in brackets.

In the downstream sector, MITI was rather more successful. It managed to create Kyodo Oil in August 1965 by the merger of the sales and storage facilities of three domestic refiners, Asia Oil, Nippon Mining, and Toa Oil. The new company was established as a joint sales firm with public financial assistance to strengthen the sales activities of domestic firms. MITI was anticipating that the creation of Kyodo Oil would be the first step towards an integrated national oil company. These hopes were frustrated

when the three companies refused to merge their refining operations and, more significantly, larger domestic firms refused to join the new company.⁶²

As noted before, despite the promulgation of PIL, MITI did not given up its aspirations for the creation of a Japanese national oil company. It tried again three times in the early to mid- 1960's to initiate plans for a state corporation to promote crude oil development by Japanese oil companies, and each time it encountered opposition from the industry as well as the Ministry of Finance. The former opposed such plans on the basis that it would enhance the state control, and the latter was apprehensive about the creation of a new government agency, although it was willing to increase funding for JAPEX.

The situation began to change, however, from the mid-1960s onwards because of an apparent shift in the position of oil consuming industries.⁶³ The Comprehensive Energy Division (which had replaced the Petroleum Council) of the Industrial Structure Council began to call for the stabilisation of crude oil supplies through the diversification of sources, construction of a Japanese tanker fleet, increased stockpiles, and further development of domestic fields.⁶⁴ Keidanren supported these calls by arguing for increased financial assistance by the state to firms engaged in oil exploration and production.⁶⁵ The industry was asking for risk free funds for oil development under Japanese control without state control, and the state wanted an integrated industry. So, probably for the first time, there was a chance for the institution of some kind of national oil company.

In September 1966 MITI published its plans for the creation of Japan Petroleum Development Corporation (JPDC), and was accepted by the Keidanren. The new body was a compromise between the upstream and downstream divisions within MITI and was

considered by the latter not to be a threat to relations with the Majors which, in its opinion, were supplying a very cheap factor of production to Japanese industry. The new corporation was also a compromise with private industry, in which the state agreed to supply risk free funds to the former without having a commercial (and hence competitive) role in the market.

The Diet passed the proposed legislation in July 1967 and the Japan Petroleum Development Corporation was established as a 100% government owned company and began operations in October of that year.

The JPDC was modelled directly upon banks rather than European national oil companies (as MITI had originally sought). The corporation was authorised to provide loans and equity, guarantee loans to private firms engaged in oil exploration and production, and also to provide services such as technology procurement and sharing, machinery leases, exploration subsidies, and other forms of support. JPDC was, however, explicitly prohibited from undertaking exploration on its own and was further required to dispose of its holdings in any firm which started producing oil. Furthermore, the corporation was prohibited from importing, selling, or allocating crude or refined products.⁶⁶

At long last, MITI had succeeded in establishing a Japanese oil company engaged in the development of overseas oil reserves, although it was far from the model it had originally envisaged. Indeed, major Japanese financial and industrial groups responded enthusiastically to the creation of the JPDC by forming multifirm consortia to develop overseas oil.

The JPDC has had a mixed success in achieving its aim of stimulating overseas oil exploration and production by domestic oil firms (see Table 2.8). Notwithstanding its

success in increasing oil production under Japanese control, there is evidence that it has achieved this with much higher costs, and a lower success rate than comparable production by international oil companies. Furthermore, it has failed in its implicit aim of consolidating the Japanese oil industry, and has probably even deepened the gap. This is due to the way that JPDC finances oil exploration.

JPDC, as will be shown in Chapter Seven, played a key role in persuading the Mitsui Bussan to offer the petrochemical joint venture to Iran as an inducement so that the Japanese consortium in which it was a major shareholder could win the bidding Lorestan oil. Moreover, JPDC offered various incentives such as low cost finance to the Japanese consortium to enable it to search for oil in that area.

Table 2.8: Oil imported from developments supported by JNOC*

Company	Cumulative production, 1961-1990 (millions of barrels)
Arabian Oil Company	2,164
Japan Oil Devt.	709
Indonesian Petroleum	278
Abu Dhabi Oil	115
United Petroleum Devt.	73
Zaire Petroleum	43
Angola Japan Oil	26
Mitsubishi Petroleum Devt.	16
Japan Peru Oil	14
Indonesia Nippon Oil Corp.	13
Mitsui Oil Exploration	10
WED Gabon Oil	9
Sumitomo Petroleum Devt.	9
Inpex Sumatra	7
Japan China Oil Devt. Co-operation	6
Mubarras Oil	5
Egyptian Petroleum Devt.	5
Total +	3,052

Notes: *- In late 1970s JPDC changed its name to Japan National Oil Company (JNOC).
 +- Table covers only companies with cumulative production in excess of 5m bbl.
 A number of other, smaller developments have been financed by JNOC.

Source: Paul McDonald (1992), p.42.

6.0- Conclusion

This chapter set out to trace the history of the Japanese oil industry, from its inception in the latter half of the 19th century to the end of the 1960s, and to analyze the causes of its fragmentation and weakness. The Japanese oil industry has three distinct features which sets it apart from its counterparts in other industrialised countries, or from other industries in Japan:

First, Japan has the second most fragmented oil industry in the world after the United States (though it should be recognised that the U.S. is a major producer of oil and also hosts four of the six largest oil companies in the world). More significant still, the Japanese petroleum industry is the only one of its kind in the world where there is a clear distinction between upstream and downstream sectors, and where participants have constantly refused, or been prevented from, integrating downstream or upstream (depending on their original positions). Second, the oil industry was, from the beginning, unlike any other Japanese industry (including coal and electric power), or indeed the oil industries of other industrialised nations, dominated by foreign (chiefly American) capital.⁶⁷

Many put the lack of political leverage (until 1960s), and the fragmentation of the Japanese petroleum industry down to deliberate state policy in order to restrain the domineering influence of foreign capital (Hein 1990). Hein further believes that after the Second World War, the Americans, for strategic (as well as commercial) considerations, prevented the integration of the Japanese oil industry. She adds that, in order to prevent the total domination of the industry by American capital, as well as to supply the cheapest factor of production to the energy consuming industries, the Japanese, with the help of the Foreign Exchange Law and other measures, kept the industry deliberately

weak and competitive.

Samuels (1987) also believes that the presence of foreign equity in the Japanese oil industry has made it less influential vis-a-vis the state and consumers. But he also postulates that the traditional strength of the Japanese capital, and what he calls the politics of *reciprocal consent*,⁶⁸ have precluded the state from acquiring a commercial presence in the domestic markets, including energy markets, as well as deflecting its efforts to consolidate the industry.

Probably, it is safe to conclude that a combination of all above factors: the American strategic considerations, the Japanese government's fear of domination of the industry by foreign capital as well as its desire for providing domestic industry with a cheap factor of production, the traditional power of Japanese capital, and lastly the dynamism and the competitiveness of the oil industry itself, have produced a weak, fragmented and unconsolidated oil industry in Japan.

It has to be stated, however, that it may be of no consequence to other industries or the Japanese economy as a whole that the domestic oil industry is fragmented or weak as long as it can supply them with a cheap, efficient, and reliable source of energy and raw material, something that the oil industry has achieved with startling success since the end of the Occupation. Moreover, the lack of access to major overseas oil reserves has not prevented Japanese oil companies from buying oil on favourable terms from major oil companies or directly from oil producing countries. The only occasions when oil supplies to Japan were threatened were the two oil crises of the 1970s. However, Japanese oil and general trading companies managed to purchase adequate amounts of oil in the international markets although at highly inflated prices. These shortages occurred not because of oil embargoes against Japan, but because of the

Western petroleum companies' decision to divert supplies destined for Japan to their own home countries. So one can understand the Japanese officials' concerns over the country's heavy reliance on major oil firms for oil imports. This situation has now considerably changed as Japanese oil companies and general trading companies purchase a significant share of Japanese oil imports directly from the oil producing countries.

The Japanese oil industry has, however, since the end of the high price oil era (1986), taken some tentative steps towards consolidation. But it is safe to assume that the Japanese oil industry will never achieve the degree of consolidation enjoyed by its counterparts in Italy, France and Britain. When two world wars and three oil crises have failed to consolidate the industry, one wonders what else can achieve that aim?

Notes

1. Samuels, Richard J. (1987), p.68.
2. The term "ZAIBATSU" refers to industrial and financial combines of a conglomerate type that grew to great size and attained a dominant position in the Japanese economy between the Meiji period (1868-1912) and World War Two. Although the holding companies of those combines were officially dissolved during the post-World War Two occupation period, the new Corporate groupings "KEIRETSU" that appeared after the war are often regarded as their direct successors. (The formation of keiretsu in the post-war period will be discussed in Chapter Five.)
3. Shibagaki Kazuo (1968).
4. Hein (1990), p.174.
5. Ibid, p.46.
6. Samuels (1987), p.169.
7. For a comprehensive analysis of the role of the Stanvac in the Japanese oil industry in the pre-war period see Anderson Jr, I.H., "The Standard-Vacuum Oil Company and the United States East Asian Policy, 1933-1941), Princeton University Press, 1975.
8. See Roberts (1971) for the role of the Japanese military in the colonisation of Asia to secure an adequate supply of oil for its needs.
9. Samuels (1987), p.173.
10. Asahi Shimbun, June 9, 1933.
11. Samuels (1987), p.177.
12. Ibid.
13. Inokuchi (1963), p.252, quoted in Samuels (1987).
14. Hein (1990), p.50.
15. Ibid.
16. Samuels (1987), p.182.
17. Robert (1971) discusses in detail the role of the Mitsui Zaibatsu in the production of synthetic fuel during the war period.
18. Hein (1990), p.52.

19. Personal interview with Takehiro Sagami, former vice-minister for international affairs, ministry of Finance, 11 July, 1980, quoted in: Yoshitsu, Michael M., *Caught in the Middle East*, Lexington Books (1984!).

20. Hein (1990), p.51.

21. Hein (1990), p.74.

22. Cohen, Jerome (1949), pp.133-137.

23. Hein (1990), p.75.

24. Hein (1990), p.64.

25. See Roberts (1971) for an in-depth analysis of the subject.

26. Hein (1990), p.56.

27. Ibid.

28. See Martin, Edwin M. (1948) for the U.S democratisation policies for Japan during the Occupation.

29. See Roberts (1971) for a comprehensive discussion of the dissolution of the zaibatsu, especially Mitsui zaibatsu, and Japanese holding companies.

30. Hein (1990), p.67.

31. For statistics on monthly coal production in Japan during 1945, 1946, and 1947, see Hein (1990), p.66.

32. For a description of miners working conditions in Japan before the war see Hein (1990), chapter 2, and Samuels (1987), chapter 3.

33. Hein (1990), p. 72.

34. Hein (1990), p.77.

35. Samuels (1987), p.188.

36. See Samuels (1987), p.316, and Cadwell (1981).

37. Hein (1990), p.77, and also *ibid*, note 42, p.340 for further sources.

38. "Majors" is the term used to refer to the seven largest (now six) oil companies in the world.

39. Being "long" on oil products means that an oil company has stocks in excess of the requirements of its own distribution channel, which it sells to other oil companies that are "short" of those products.

40. For a full account of the developments in the international oil markets see Odell (1980).
41. Samuels (1987), p.189.
42. Hein (1990), pp 204-205. See note 73, p.368 for the original document.
43. Hein (1990), p.205.
44. Hein (1990), p.209.
45. For a discussion of the rationalisation policy see Johnson, C. (1982), and Hein (1990), chapters 6,7, and 8.
46. For a full analysis of the failure of the Japanese coal industry to respond to the rationalisation policy and other governmental measures see Samuels (1987), chapter 3, and Hein (1990), chapter 7.
47. For a full discussion of the development of the Japanese electric power industry see Samuels (1987), chapter 4, and Hein (1990), chapter 9.
48. Johnson, C. (1978), p.129.
49. See Samuels (1987), chapter 7, for a good discussion of the subject.
50. Aki, Koichi (1956).
51. See Samuels (1987), pp.192-194, for the story of the creation of JAPEX.
52. Tonedach, Masahisa, (1982).
53. For the history of the AOC, see Tsurumi, Yoshi, "Japan", in Vernon (1976), Caldwell (1981), and Brown (1983), Morse (1986), and Samuels (1987).
54. See above references.
55. Samuels (1987), p.195.
56. Hein (1990), p.305.
57. Ibid, p.306.
58. For an explanation of the report and of the two alternatives, and the opposition it faced from the Japanese business community, see Samuels (1987), pp.198-204.
59. McDonalds, Paul, (1992), p.52.
60. See Samuels (1987), p.203, and note 108, p.318.

61.Caldwell (1981), p.119.

62.See Brown (1983), p.63, for the details of the creation of Kyodo Oil.

63.Although Samuels (1987: p.205) mentions this point, he does not elaborate. This shift could be due to the growing importance of oil to consuming industries like steel and electric power, and the increasing hold of foreign oil companies over oil supplies(1987).

64.Ibid.

65.As we shall see in Chapter Seven Keidanren played a very decisive role in persuading Mitsui Bussan to enter into the petrochemical joint venture with Iran so that Japanese companies could win the bidding for the Lorestan oil as well as to improve relations with Iran; the biggest oil supplier to Japan in the late 1960s.

66.See McDonald (1992), Chapter 3, and Samuels (1987),pp.204-210, for the details of the creation and of activities of the JPDC (now Japan National Oil Corporation).

67.See Samuels (1987), chapter 2, for a detailed comparison of state-owned energy corporations in the industrialised world.

68.For the theoretical explanation of the term see samuels (1987), chapter 1.

CHAPTER THREE

JAPAN'S ECONOMIC RELATIONS WITH IRAN (WITH SPECIAL REFERENCE TO OIL)

1.0- Introduction

In this chapter Japan's economic relations with Iran will be discussed. The emphasis will be on the oil connection as it forms the crux of the commercial and even diplomatic relations between the two countries. Moreover, as hypothesised in the introduction, it was the Japanese desire to gain access to Iran's oil reserves which enticed its government and business community to support the petrochemical joint venture between the two countries.

These relations will be analyzed within the context of the historical relations between Japan and the Middle East, as it is imperative to know about the origins of such connections in order to understand the current situation.

2.0- Early Contacts

Contacts between Japan and the Middle East go back many centuries. The history of these relations can be divided into two periods: before and after the Meiji Restoration of 1868.

Japan began to have indirect contacts with the Middle East mainly through the Chinese in the first millennium. Among the treasures of the Shosoin in Nara, for example, medicines, glassware and musical instruments are found that were apparently transmitted from the Middle East. The Shosoin treasures are known to have been mainly bequeathed by Empress Shoma who died in 756.

The first Japanese to leave some evidence of direct contact with a Persian is the Buddhist priest Kyosei from Kyoto. In 1217 Kyosei visited a Persian trade ship at the

Port of Quanzhou (Chuanchou) in China's Fukien Province. The two rubai poems¹ that the Kyoto priest was given then have survived, and the French Orientalist, Paul Pelliot, who had examined these quatrains concluded that they are "the oldest written Arabic [Persian] document remaining in the Far East."²

The first Europeans that came to Japan were the Portuguese who landed there in 1545. After them came the Spanish, then the Dutch, and other Europeans, bringing waves of knowledge and information totally new to the Japanese at that time. Through these contacts with Europeans of the Sixteenth Century, the Japanese learnt a great deal about the Islamic Civilisation. In an article written in 1940, entitled "The History of Cultural Exchange Between Japan and the Islamic World; Pre-Meiji Japanese Knowledge about Islam and its World", Dr Hajime Kobayashi traced the process by which the Japanese acquired, directly or indirectly, knowledge about that part of the world and its culture.³

The Islamic people, too, learned of Japan through Chinese intermediaries. As early as the Ninth or Tenth Century A.D, Japan appeared for the first time as "Waq Waq" in Persian and Arabic writings. Waq Waq is believed to have been derived from the Chinese characters for the Kingdom of Wa by which Japan was known in China.⁴

The people of the Middle East do not seem to have developed any knowledge of Japan beyond the level of legend, for the fall of the Islamic Empire followed by Mongol and Timur invasions, split the Islamic world apart and weakened it, making any further contact very difficult. Contacts were further strained by the Tokugawa Shogonate decision to close Japan's doors to outsiders in the Seventeenth Century. So, it was not until the beginning of the Meiji period (1868-1912) that anything more than indirect, vague knowledge of many parts of the world, including the Middle East developed.

After more than two hundred years of national seclusion, Japan began to direct its attention to the outside world. An increasing number of Japanese started going abroad but their interest was focused on absorbing the cultures of Europe and North America to formulate a model for their country's modernisation. By this time, most of the Middle East had not yet been liberated from colonialism, and the whole region remained in a period of cultural and economic stagnation. Due to the above reasons, the Middle East was largely ignored by the Japanese people until very recently.

3.0- Japan's Relations with the Middle East After the First World War

Before the First World War, there was little, if any contact between Japan and the Middle East. After the war, however, some Japanese scholars were attracted to the rich but forgotten cultures of the Middle East and began to study the region, and some Japanese converted to Islam. Diplomatic relations between Japan and some countries of the region were also established in the interwar period.

Moreover, Japanese businessmen, especially textile manufacturers, started to penetrate the Middle Eastern markets which until then been dominated by big Western powers like Britain, France, and Russia.

Japanese interest in the Middle East and especially the Islamic culture started to grow after the First World War, when political, economic and military relations with China and Southeast Asia, the home of many muslims, and also her relations with the Axis Powers began to grow. Around the same time, European works on the religion and the world of Islam began to be translated into Japanese. Fact finding surveys were organised, and study programmes in Arabic and other languages of Islamic countries began.

3.1- Diplomatic Relations⁵

Prior to the First World War, Japan had little contact with the Middle East either politically or economically. The Japanese government had, in fact, attempted to establish relations with some Middle Eastern states, notably Turkey (the Ottoman Empire) and Iran, before the war. Likewise, these two countries themselves wanted to establish relations with Japan. Abdulhamid II, the Ottoman Empire's Caliph, in particular, was very much in favour of such links. However, attempts by both countries to establish relations were frustrated by the fact that they were both bound by capitulation. Similarly, Japan and Iran attempted to establish relations with each other before the war, but their efforts failed, largely again due to the problem of capitulation.

It was, therefore, not until the postwar years that Japan began to set up diplomatic offices in the Middle East. The first Japanese Consulate in the region was set up in December 1919 in Port Said (Egypt) mainly for security and protection of Japanese shipping through the Suez Canal.

In the immediate postwar years, various peace conferences were held in Europe to decide the destiny of the Ottoman Empire, and Japan, as a victorious power, participated in them. It was these conferences that provided Japan with the opportunity to become familiar with the economic and political conditions of the various Middle Eastern nations for the first time in her history. She also became aware of these states as potential markets for her manufactured goods but there were no diplomatic or trade facilities available to her merchants. So after the Treaty of Lausanne, Japan signed a Treaty of Commerce and Navigation on a "most favoured nation" basis with Turkey, and in 1925 she established the first and only embassy in the entire Middle East in the inter-war period at Istanbul, followed by a Consulate-General at Alexandria (Egypt) in 1926.⁶

3.1.1- Diplomatic Relations with Iran

In the early postwar years some attempts were made by Iran and Japan to conclude a commercial treaty but because the latter insisted that any Irano-Japanese treaty ought to include extra-territorial rights for the Japanese in Iran, a proposal which was unacceptable to the Iranians, no agreement was reached. It was, therefore, not until after 1928, when Iran managed to abolish the capitulation, that the two countries entered into fresh talks. Eventually, the first Irano-Japanese Treaty of Commerce and Navigation was signed on the 31st May 1929, and the Japanese Legation was established in Tehran on 1st August of that year.

3.2- Trade Relations Between Japan and the Middle East

As noted earlier, prior to World War One, the Middle East had been little known to Japan either politically or economically, although small quantities of such Japanese products as silk goods, porcelain and lacquer wares had been exported to Egypt and Turkey, mainly through India or Europe.⁷

By the time Japanese cotton goods started to find their way into the Middle East, British goods had already been known in the region for more than a century. Furthermore, British merchants were benefitting from the security, protection and market intelligence provided by their British diplomatic offices in the region. They also enjoyed credit and transport facilities provided by British banks and shipping companies who had a strong presence in the region. None of these facilities were available to Japanese merchants. The only advantage Japan had over her European competitors at that time was that as the standard of living in most of the Middle Eastern states was not very different from that of Japan, what she produced for domestic consumption could mostly

be sold to the consumers in these countries, whereas her European competitors had to manufacture low quality, low priced goods specifically for poor consumers abroad.⁸ Although certain quantities of Japanese goods, textiles in particular, found their way into the Middle East in the first half of the 1920s, the volume of these goods did not increase substantially. The two main obstacles in the way of Japan's trade expansion in the Middle East were transport difficulties and the insistence of Japanese exporters on cash payments.

Under strong representation from exporters and some persuasion by Japanese diplomats in the Balkans and Turkey, a conference on the Balkans and the Middle East was held in Istanbul in April 1926. The conference decided to adopt four main resolutions to put forward to the Japanese government. These were the establishment of a direct Japan-East Mediterranean shipping route under government grants, the appointment of Japanese commercial consulars or secretaries to key cities in the Balkans and the Middle East, the establishment of commercial museums in those cities, and the creation of an export compensation fund for insurance against export losses incurred in cultivating new markets in the region. To these resolutions, the Japanese Foreign Ministry added a number of other promotional measures including the formation of export guilds of traders, the holding of circuit sample fairs, and the establishment of a branch of the Yokohama Specie Bank in Istanbul.

During the inter-war years, the Ministry of Commerce and Industry (MCI) played a major role in facilitating Japan's trade expansion into the Middle East. Even before the trade conference of 1926, MCI had appointed Overseas Trade Correspondence in 1925 to Port Said. In the 1930s a Trade Correspondent was also appointed to Tehran whose jurisdiction comprised Iran, Iraq, and Caucasia.⁹ The Ministry adopted few other

measures to promote Japanese goods in the Middle East like dispatching commercial travellers to take sample goods to various countries and establishing commercial museums and trade agencies in the region. In mid-1927 the first Japanese commercial museum was set up in Cairo, followed by a second one in Istanbul in March 1929. Furthermore, a commercial exhibition centre attached to Japan's Legation in Tehran was set up in 1935. However, it was closed down in 1937 together with the commercial museum in Cairo, because the Japanese government considered them ineffective in trade promotion, and instead set up trade agencies in Beirut, Alexandria, and later Baghdad.

As Japan's exports to the Middle East rose enormously, she bought practically nothing from the region in return and, as a result, she began to accumulate huge trade surpluses with the countries in the region (it is interesting to note that today's situation is quite the opposite, whereby oil producing countries in the Middle East have large trade surpluses with Japan). This allowed Japan to obtain valuable foreign exchange to pay for her import of raw material from other parts of the world. Needless to say, this situation caused trade frictions between some Middle Eastern countries and Japan and a few of them resorted to protectionism and setting up trade barriers against imports of Japanese goods.

It is important to note that in the inter-war period, the great 'oil boom' had not yet arrived in the Middle East, and the economies of all the countries were based largely on agriculture but Japan found it much cheaper and easier to buy her foodstuff and other raw materials from countries which were big producers of such goods like the U.S., rather than the smaller ones in the Middle East (see Tables 3.1, 3.2 & 3.3).¹⁰

Table 3.1 Japanese Exports to the Middle Eastern States
(1,000 yen)

	1920	1929	1931	1933	1935	1937	1939
Turkey	736	2,551	3,790	2,432	3,241	2,753	876
Egypt	30,550	31,252	22,830	55,608	53,800	32,772	15,666
Iran	-	-	-	-	9,591	2,629	19,332
Iraq	-	-	-	-	22,073	23,644	24,334
Aden	-	-	4,809	7,193	13,208	14,177	10,002
Arabia	-	-	-	-	4,576	4,827	3,748
Total	31,286	33,903	31,429	65,233	106,489	80,802	73,952

Note: Arabia comprises Saudi Arabia, Kuwait, Trucial Oman, Oman, Qatar, and North Yemen.

Sources: Japan Statistical Yearbooks, 1949, pp.480 and 483; 1950, pp.217 and 220; 1955/56, p.249.

Table 3.2: Japan's Shares in the Total imports of the Middle Eastern States (% of Total Values)

	<u>1929</u>	<u>1934</u> (a)
Turkey	2.1	1.8 (14)
Egypt	3.3	11.8 (2)
Iran	0.7	8.4 (6)
Iraq	(e)	20.4 (2)
Aden	6.7	15.3 (2)
Palestine	0.1	3.9 (6)
Syria	2.2	11.3 (2)

Notes: (a) The numbers in brackets refer to the order of importance as exporter to the countries concerned.

(b) Not available.

Source: Shimizu, H., in "The Japanese Approach to the Contemporary Middle East", SOAS, 1990, p.7.

Table 3.3: Japan's Imports from the Middle Eastern States
(1,000 yen)

	<u>1920</u>	<u>1929</u>	<u>1931</u>	<u>1933</u>	<u>1935</u>	<u>1937</u>	<u>1939</u>
Turkey	604	202	374	976	1,036	2,818	2,918
Egypt	13,263	25,824	13,568	26,456	51,305	74,118	50,312
Iran					729	1,589	6,587
Iraq					1,257	9,028	3,690
Aden			22	10	364	1,356	2,291
Arabia (a)					434	546	9
Total	13,867	26,206	13,964	27,442	55,125	89,455	64,898

Note: For Arabia see Table 3.1.

Source: Same as Table 3.1.

3.2.1- Trade Relations with Iran

Like most other Middle Eastern countries, cotton piece goods were the largest single item of imports into Iran in the inter-war period, and accounted for a fairly large part of her total imports.

Up until the close of the 1920s, only small quantities of Japanese cotton goods had found their way into Iran, and the competition in that market had been mainly between Russia, U.K., and India. In addition, cotton goods were also very important to the principal exporters to Iran (excluding Germany): Russia, U.K., India and Japan, and as Table 3.4 shows, these goods constituted a fairly high proportion of their total exports to the country. In the case of Japan, as much as 76.7% of the total consisted of cottons in 1931-1932. Therefore, if any of the four increased her market share for these goods,

she could greatly improve her overall trading position in Iran and vice versa (see Table 3.4).

The Iran-Japan Treaty of Commerce and Navigation was signed in Tehran on 31st May 1929 on a 'most favoured nation' basis. Moreover, in the early 1930's, a Japanese trade correspondence was appointed to Tehran, while the two largest Japanese trading companies: the Mitsui Bussan and the Mitsubishi Shoji, set up their own trade representative offices in Tehran. According to an Iranian Ministry of Finance official, these two firms worked on the policy of "large sales, small profits and quick returns."¹¹ Thus, by the early 1930's most of the basic factors for Japan's trade expansion into Iran were in place but one major problem remaining was the absence of direct Japan-Persian Gulf shipping. This problem was also rectified when a direct shipping line between the two countries was established in January 1934.

In Iran, like other Middle Eastern countries, Japanese cotton goods were much cheaper than similar European products in the 1920s. Cheap Japanese goods became even cheaper with the depreciation of the yen against gold which followed the abandonment of the gold standard by Japan in December 1931. This helped Japanese goods to become around 40-50% cheaper than similar European ones.

By 1933-34, Japan had become the second largest exporter of general merchandise to Iran, coming only after Russia, her total export amounting to 82 million rials, as compared to the latter's 145.1 million rials.¹² Japan would have become Iran's biggest trading partner before the mid-1930s, had it not been for the latter's economic difficulties, like large trade deficits and a depreciating currency. The trading position of Japan was further weakened in March 1936, when the Iranian government reimposed the foreign exchange control which it had abandoned in February 1932. The reimposition of

the foreign exchange control helped to facilitate Iran's trade with Russia and Germany, both of whom had in 1935 concluded special trade agreements with the country.

Trade with Russia was favoured by the Iranian government and merchants because, under the barter trade agreement, Russians bought Iranian goods, especially agricultural products, as Russia had always been the biggest customer for these products. The relatively better transport facilities in Iran's Northern Provinces which border Russia also greatly helped trade between the two countries.

When the Trans-Iranian Railway was completed in August 1938, she was in a good position to transport her agricultural products from the Northern Provinces to countries other than Russia. According to the Japanese Minister¹³ in Tehran, the new railway provided Japan with a good opportunity to supply the Northern provinces of the country with cotton piece goods, as well as matches and sugar, the bulk of which had until then been supplied by Russia.¹⁴ As Table 3.5 shows, Japan's share in Iran's foreign trade jumped from 2.5% in 1938-39 to 10.5% in 1939-40, partly because of transport facilities provided by the railway, and partly because of the change in Iran's foreign policy.

When in August 1938 the Russo-Iranian commercial agreement of 1935 expired, Iran did not renew it, as she wanted to move away from Russia in favour of other countries, particularly Germany. The combination of these two factors helped Japan to become the largest supplier of cotton goods in 1938-39.

In October 1939, the Irano-Japanese treaty of Commerce and Navigation was signed in Tehran, although its ratification by the two governments was delayed until May 1941, largely due to Iran's economic crisis. The Japanese were hopeful that they would continue to supply Iran with large quantities of cotton goods in the absence of Russian

competition. But Irano-Japanese economic and political links ended when Iran was occupied by Allied forces in August 1941.

Table 3.4: Proportion of Cotton Piece Goods in the Total Exports to Iran by Her Major Trading Partners (% of total value)

	1921/22	1927/28	1931/32	1934/35	1937/38
U.S.S.R	*	27.4	46.5	37.8	35.8
U.K.	40.0 (a)	41.4	63.9	12.0	36.4
India	--	10.6	29.8	9.1	15.7
Japan	*	*	76.7	75.0	68.7

Notes: *- not available.

(a)- includes India.

Source: Shimizu (1986), p.241.

Table 3.5: Percentage shares of Principal Trading Nations in Iran's Foreign Trade, 1930/31-1939/40 *

	Russia	U.K. +	U.S.	Germany	Japan	France	Others	Total
1930/31	37	25	9	6	4	3	16	100
1931/32	39	25	9	8	2	2	15	100
1932/33	28	23	12	8	5	2	22	100
1933/34	22	22	12	13	9	2	20	100
1934/35	34	21	11	9	6	2	17	100
1935/36	39	23	11	14	6	3	14	100
1936/37	36	16	10	21	3	1.5	12.5	100
1937/38	34	13	8	27	4	2	12	100
1938/39	11.5	18	6.5	41.5	2.5	1	19	100
1939/40	0.5	17	9.5	39	10.5	2	21.5	100

Notes: *- excludes oil and non-dutiable items.

+ - includes India.

Source: Hachemzadeh (1943), Table 34, p.93.

3.3- The Oil Connection

Although oil had been discovered in the Middle East for quite some time, the Japanese government did not make any attempts, save one, to purchase oil from the region. As a matter of fact, oil was discovered in Iran in 1908, and in the 1920-30s in Iraq, Saudi Arabia, Kuwait, and Bahrain. However, oil exploration and production was monopolised by the Anglo Persian Oil Company in Iran (renamed Anglo Iranian Oil Company), and Iraqi Oil Company in Iraq, both of which were controlled by the British. The Americans also won total rights over the Saudi oilfields in the 1930s. On the other

hand, the bulk of Japan's crude and heavy oil imports came from the U.S., largely because of low prices prevailing in California, while a large part of her refined products were imported from the Dutch East Indies.¹⁵ However, Japan did import certain quantities of crude oil from Bahrain in the second half of the 1930s¹⁶, and Mitsubishi Shoji made an import contract of 200,000 tonnes of Iranian oil products in 1939 and imported 40,000 to 50,000 tonnes in 1939.¹⁷ But this was an exception as the Anglo Iranian Oil Company, which was the sole producer and distributor of Iranian oil had neither import agents nor local distribution and sales networks in Japan.¹⁸ (AIOC might have kept away from the Japanese oil market in accordance with the Achnacarry Agreement which restricted competition between international oil companies.)¹⁹ However, as Japan's relations with the Allies gradually deteriorated towards the end of the 1930s, she had to seek new sources of supplies.²⁰

In March 1938, a major field was discovered by the Americans in Saudi Arabia, and Japan, upon learning about it, sent a delegation in April 1939 to obtain an oil concession from the Saudis. Although the Japanese offered various inducements to the Saudis, no agreement for an oil concession was reached between the two and, hence, Japan did not succeed in its one and only attempt in the inter-war period to gain access to the Middle East oil reserves.

According to K.S. Twitchell, although the Japanese terms were "as tempting as they were fantastic", the Saudi authorities took his advice that the Japanese were after territorial concessions and their motives were political, not commercial.²¹ However, according to a secret Japanese Foreign Ministry document, the terms of a Saudi concession were not acceptable to the Japanese.²² Japan also tried in the late 1930s/early 1940s to buy oil from Saudi Arabia and, according to Japan's trade statistics,

in 1940 she imported 1,619,000 yen worth of crude from 'Arabia' which included Saudi Arabia as well as other Arab states in the Arabian Peninsula. In the following year the figure was 1,189,000 yen. As Japan imported 352,460,000 yen worth of crude oil in 1940, 76.7% of which came from the U.S. alone, 'Arabia' was responsible for a mere 0.46% of her total oil imports in that year.²³ Therefore, in sharp contrast with the postwar period, oil did not constitute the bulk of the Middle Eastern exports to Japan in the inter-war years (in fact Middle Eastern countries hardly had any exports to Japan during this period).

3.4- Japan's Direct Investments in the Middle East

In the inter-war period, Japan contemplated investing in the Middle East, but no actual investment took place. First she considered the possibility of establishing cotton textile mills in Turkey which was in desperate need of capital for the development of the local textile industry. Both the Japanese and Turkish governments were in favour of the plan, but it never materialised.²⁴

Moreover, in the late 1930s, Japan planned to set up a tinned-food factory and start the cultivation of cotton in Iraq. The proposal for these plans was made by the Japanese government to its Iraqi counterpart in the hope that the latter would remove the trade restrictions imposed on Japanese goods in 1936. However, the Iraqi government rejected these proposals.²⁵ As a result, in the inter-war period, Japan did not make any direct investments in the Middle East.

3.5- Japan's Islamic Policy

Besides her rapid trade expansion in the late 1930s, Japan became increasingly

interested in political and strategic aspects of the Middle East. Ever since the First World War, there had been a number of events which seemed to have caused her to move closer to Germany and Italy in the second half of the 1930s. First, when in 1911 the Anglo-Japanese Alliance Treaty of 1902 expired, the British refused to renew it in favour of closer co-operation with the United States in the Pacific region. Then in 1931, Japan invaded Manchuria but the League of Nations refused to recognise it. So the Japanese government announced in March 1933 that she would leave the League in two years time. Similarly, when Italy invaded Abyssinia (Ethiopia) in October 1935, the League of Nations declined to acknowledge it either. However, by mutual agreement, Japan recognised Italy's position in Abyssinia while the Italian government gave its recognition to Japan's position in Manchuria.

Germany also announced its intention to leave the League of Nations in October 1933. As a result of these developments, Japan, Italy and Germany, in late 1937, by means of two treaties, created the informal 'Tokyo-Rome-Berlin' alliance. These treaties were followed by a formal military pact in September 1940. However, as Japan and her Axis partners were located in the Far East and Europe respectively, and as the main communication routes passed through the Middle East, Japan became increasingly aware of the strategic value of the various Middle Eastern states. Since all the countries in the region were Islamic, she also became interested in Islam as well.

Furthermore, Japan began to consider the possibility of mobilising muslim forces to fight against China, Russia and the U.K., in various parts of Asia, particularly after the outbreak of the Sino-Japanese War in July 1937.

In furtherance of this policy, Han Wakabayashi who was closely associated with the militarists in Japan, in 1924 sent Ippei Tanaka, a Japanese muslim convert on

pilgrimage to Mecca for the first time.²⁶ At that time only a few Japanese supported him. But gradually several influential men in the government including the War Minister, General Araki, began to give their support to him. In 1933, Wakabayashi invited Rashid Ibrahim, a renowned muslim from Turkey, to settle down in Tokyo to promote Islamic activities in Japan. Also in the 1930s a group of Japanese were sent to Mecca several times by him, and the expenses for these trips were often borne by large Japanese firms.²⁷

As the Sino-Japanese War progressed, the Japanese government itself began to implement the pro-Islamic policy and various measures were taken by the authorities to promote Japan's Islamic activities both at home and abroad. These measures included: setting up several associations and societies for the study and promotion of Islam, which in turn published many journals on Islamic affairs. Other measures were: the establishment of a Committee on Jewish and Islamic Questions in 1938, bringing overseas muslims to Japan under direct government control, providing subsidies and tax exemptions for setting up mosques in Tokyo and other places, inviting Islamic religious leaders and scholars to visit Japan and finally, the legalisation of the Islamic religion.²⁸

Japan was now looking for ways to implement her pro-Islamic policy with reference to the Middle East. The Japanese Ambassador to Istanbul, and the War Minister, both contended that, on account of the strategic importance of the Arab countries, it would be necessary for Japan to formulate two sets of Islamic policy: one specifically for the Arab states mainly against the British, and the other one for the countries bordering Russia (Turkey, Iran, and Afghanistan).

So, the Japanese authorities were becoming more and more interested in mobilising the muslim forces against the Chinese, Russians and the British, while moving

closer to their Axis partners in the late 1930s. But as Japan began to be engaged in the Pacific War in 1941, she had no resources left for the implementation of her Islamic policy in the Middle East. Nevertheless, during the Pacific War, the Japanese made use of their Islamic policy in Southeast Asia, notably the Dutch East Indies.²⁹

3.6- End of Japan-Middle East Relations

After the collapse of France in 1940 and the declaration of war on the Allies by Italy, the war intensified in Europe and soon spread to the Middle East. As Japan was one of Axis partners, the Suez canal was closed to Japanese Shipping and, thereafter, only limited quantities of Japanese goods could be imported to the Middle East through the Port of Basra. Several Middle Eastern countries severed their relations with Japan and it was then that Japanese goods began to disappear completely from these markets. The new pro-British government of Iraq severed her relations with Japan on 16th November 1941, followed by Egypt on the 8th December the same year. Iran was invaded and occupied by the Russians in the north and by the British in the south in August 1941, and severed relations with Japan under strong British pressure.

4.0- JAPAN'S RELATIONS WITH THE MIDDLE EAST AFTER WORLD WAR TWO

It was from the early 1950's onwards that relations between Japan and the Middle East which had been broken during the Second World War began to be re-established. During the war, however, there was great admiration for Japan because she was in conflict with the countries that were the main colonial powers in the Middle-East. Support for Japan also stemmed from pride that a 'non-white' country had taken on the dominant 'white' order and done well.

Towards the end of the war, Japan was occupied by the Allied forces (American) and remained so until 1952. During the Occupation, the Americans implemented two policies namely demilitarization and democratization, which were to have long term effects on Japan in the politico-economic spheres (these two policies are discussed in chapter Two, with especial emphasis to their effects on the Japanese energy industries).

Moreover, in 1951 Japan signed the San Francisco Peace Treaty and the Japan-US Security Treaty. These treaties too, had a decisive impact on Japan's future, making her security dependent upon the politico-military and economic systems of the free world for whose maintenance the U.S. was primarily responsible. Since then, in political and security fields, Japan's relations with the United States has been the cornerstone of her foreign policy, including her policy towards the Middle East. This set-up enabled Japan to concentrate almost exclusively on economic activities, some argue to the detriment of an active foreign policy. Japan's foreign policy during the 1950s and 1960s which were decades of high growth was characterised by 'passive diplomacy' and 'low posture' and placed a heavy emphasis on external economic relations.

4.1- Japan's Diplomatic Relations with the Middle East

During the years immediately following the Second World War, the Japanese were too preoccupied with their physical survival and with national reconstruction to pay much attention to the Middle East. With the conclusion of a formal peace treaty in 1951, however, Japan began to rebuild her pre-war network of foreign ties as part of a long-term policy designed to rehabilitate her international image and develop overseas trade. Nonetheless, re-establishing relations with the southeast Asian countries which Japan had occupied during the war was not easy as they regarded her efforts with suspicion. But the

countries of the Middle East had not engaged in warfare with Japan and did not fear any resurgence of Japanese activity, so diplomatic relations were re-established with little difficulty.³⁰

4.2- Japan's Trade Relations with the Middle East

With the attainment of full independence, coupled with nationalisation of their oil resources, and the subsequent increased revenues from it after the war, many Middle Eastern countries, particularly the oil producing ones, began to implement economic development programmes. Many of these programmes called for large-scale increases in imported capital goods from the industrialised countries, and Japan, in many respects, was in a good position to meet these demands. Probably, the most important factor was that Japan did not have a legacy of imperialism and intrusion in the Middle East. In addition, Japan's apolitical image of technical proficiency without the 'political baggage', made her a less politically obtrusive and controversial partner in development than was the case for other developed countries. Furthermore, the Japanese model of development was attractive for these countries which were hoping to follow her example. So the Middle Eastern countries were as eager as Japan to deepen their mutual economic ties. Therefore, immediately following the re-establishment of diplomatic relations, Japan opened sales offices in Cairo, Beirut, Tehran and other Middle Eastern cities, made economic agreements, exchanged trade delegations and participated in Middle Eastern trade fairs and exhibitions.

As the pace of economic development and expectations of higher living standards in the Middle East, particularly the oil producing nations, increased, so did the import of goods from abroad, including Japan. Big trading firms, as in the pre-war period,

exported capital as well as consumer goods to the region which were sometimes financed by Japanese banks and manufacturers. Textiles again became the leading Japanese export commodity to the Middle East. During the early and mid-1950s, cotton, rayon, synthetic fibre and woollen fabrics constituted over two-thirds of Japanese exports to the region, with annual sales exceeding \$75,000,000.³¹ However, the pattern of exports started to change during the 1960s, and goods, including capital goods, became a major export to the region (see Table 3.6). Sales of Japanese machinery (excluding such 'precision goods' as cameras and binoculars) in the Middle East multiplied 8.5 times between 1955 and 1965, from \$10 million to \$85 million. By the end of 1972, sales increased almost five times more to \$400 million.³² While the value of Japanese exports to the Middle East each year between the 1950s and early 1970s never exceeded 5% of Japan's overall foreign sales, they nevertheless surged ahead substantially, from 6,493 million yen (\$18 million) in 1950 to 58,38 million yen (\$162 million) in 1960 and to 330,433 million yen (\$1.1 billion) in 1972 (see Table 3.7). Japan quickly became and remained one of the single most important sources of foreign made commodities for Iran, Kuwait and Saudi Arabia (Table 3.7).

Table 3.6: Structure of Japan's Exports to the Middle East in 1960 and 1972 (% of total values)

		Textiles	Chemicals	Metal & Metal Products	Machinery & Equipment
Egypt	1960	2.4	2.6	13.9	29.0
	1972	3.2	4.7	51.0	31.1
Iran	1960	48.6	0.0	9.4	26.8
	1972	17.5	2.9	33.3	33.0
Iraq	1960	60.6	0.2	3.8	17.8
	1972	8.5	3.2	35.4	47.0
Kuwait	1960	42.2	1.8	12.7	19.1
	1972	21.8	1.5	12.6	50.2
Saudi Arabia	1960	34.0	1.3	33.2	11.2
	1972	15.0	1.0	29.3	43.0

Sources: JETRO, 1969, pp.44, 75, 96, 127, & 285.

Japan Statistical Yearbook 1973/74. pp.298-99.

Table 3.7: Japanese Exports to the Middle Eastern Countries (in millions of yens)

	1950	1955	1960	1965	1970	1972
Turkey	49	1,272	2,160	4,019	5,727	11,850
Egypt	955	5,124	7,336	6,973	4,448	5,294
Iran	1,202	8,072	12,476	21,016	64,350	99,088
Iraq	706	7,756	6,762	8,748	5,738	9,559
South Yemen	2,665	3,461	5,627	10,959	7,362	3,543
North Yemen			15	65	1,334	4,915
Saudi Arabia	273	2,372	5,612	17,453	30,167	73,238
Kuwait	171	2,265	8,067	14,681	33,968	35,805
Bahrain	54(a)	644	1,622	2,037	5,034	7,963
Muscat & Oman	14(a)	150	100	278	847	2,124
U.A.E.		(b)	(b)	(b)	(b)	29,654
Qatar		(b)	(b)	(b)	(b)	4,978
Trucial Oman & Qatar		716	1,688	2,846	13,284	(c)
Syria	173(d)	2,502	2,489	3,592	5,804	9,878
Lebanon	209(a)	434	2,111	5,974	10,613	14,712
Jordan	10(a)	637	1,421	2,358	3,963	4,409
Israel	12	533	902	7,573	7,190	13,423
Total	6,493	35,938	58,038	108,572	200,099	330,423

Notes: (a) 1951. (b) included in Trucial Oman & Qatar.

(c) included in U.A.E. & Qatar. (d) 1951 and does not include Latakia

Source: Japan Statistical Yearbook 1951, p.196; 1966, pp.294, 295, 297; 1975, pp.288-90; Institute of Developing Economies 1973, pp.18-24.

Even more significant for the growth of Japanese-Middle Eastern trade relations during the 1950s and 1960s were Japanese imports from that region which rose from 13,261 million yen in 1950 to 1,066,545 million yen in 1972 (see Table 3.9). The bulk of these imports comprised crude oil and Japan, in sharp contrast with the pre-war years, began to have large trade deficits with the Middle Eastern countries. The region's share in total Japanese imports rose sharply from 3.8% in 1950 to 7.6% in 1955, 11.7% in 1965, and 14.8% in 1972.³³

There were also significant changes in the composition of the Middle Eastern countries' exports to Japan from the pre-war period. Before the war, raw cotton made up the bulk of the region's exports to Japan. Although it remained the main export item for some Middle Eastern countries like Egypt, Turkey and Syria, it was oil which constituted the bulk of the region's exports to Japan. For example, in 1967 mineral fuels (mainly crude oil) accounted for 98.2% of Iran's total exports to Japan, 99.2% of Kuwait's, 99.6% of Saudi Arabia's, and 97.8% of Iraq's.³⁴

This steep rise in Japanese imports from the Middle East was not, however, in the view of some countries in the region, sufficient. For instance, Iraq was unhappy with Japan's meagre purchases of her agricultural products like raw cotton and especially dates, and on several occasions imposed heavy tariffs on, or even banned imports of Japanese goods, in order to force the latter to increase her imports of these commodities. Likewise, Iran, which did not consider the sale of her oil by the international Majors as her own exports to Japan, imposed heavy duties on Japanese products, so that the latter would increase her direct purchase of Iranian oil. (This point will be discussed in detail in future sections.) On the other hand, countries like Saudi Arabia and Kuwait, which did not have indigenous industries to protect, or did not have any other commodities

other than oil to offer, did not place any restrictions on Japanese goods and even encouraged such imports.

Table 3.8: The Middle Eastern Countries' Exports to Japan (in millions of yen)

	1950	1955	1960	1965	1970	1972
Turkey	42	396	1,010	1,338	1,206	6,327
Egypt	4,392	10,643	6,711	10,071	17,042	10,227
Iran	78	7,920	8,988	88,898	353,308	458,818
Iraq	2,334	2,055	23,798	26,030	66	1,698
South Yemen	364	1,159	494	3,345	6,741	2,246
North Yemen	26 (a)	424	339	171	648	467
Saudi Arabia	3,922	35,169	37,971	83,290	156,634	277,571
Bahrain	186 (a)	360	2,959	6,368	9,119	8,066
Muscat & Oman		324		2	23,385	39,641
Kuwait	741	5,914	73,890	109,981	110,989	168,868
U.A.E.		(b)	(b)	(b)	(b)	69,563
Qatar		(b)	(b)	(b)	(b)	1,454
Trucial Oman & Qatar		709	421	5,329	42,290	(c)
Syria	1,166 (d)	1,425	959	401	6,026	2,072
Lebanon		37	199	156	621	584
Jordan		356		238	51	881
Israel		460	599	9,004	10,017	18,062
Total	13,261	67,351	158,388	334,622	752,141	1,066,545

Notes: (a) 1951

(b) included in Trucial Oman & Qatar.

(c) included in U.A.E. & Qatar. (d) 1951, and does not include Latakia.

Sources: Same as Table 3.7.

4.2.1- Trade Relations With Iran

Japan's trade relations with Iran were re-established after the war on a moderate scale. The main reason for this was the oil nationalisation dispute between Iran and the U.K. which lasted for two years from 1951 to 1953, bringing oil exports, Iran's main source of foreign currency earning to an almost complete halt. However, with the resolution of the dispute by means of the August 1953 military coup, her oil exports were resumed in 1954 by the newly formed Iranian Consortium which was made up of Major international oil companies. (This point will be discussed in detail in the next chapter.)

The Consortium members rapidly increased the sale of Iranian oil to Japan and, as a result, Japan's trade balance with Iran went into a deficit in 1961 and has continued up to now (see Tables 3.7, 3.8, & 3.9). This situation was quite the reverse of the pre-war situation when Iran's trade with Japan was in chronic deficit (see Tables 3.1 & 3.3).

As mentioned before, crude oil accounted for 98.2% of Iran's exports to Japan. However, Iran did not consider oil exported to Japan by the Consortium as her own export and, therefore, believed that she had a trade deficit with the latter. Furthermore, Japan, due to the limited range and low quality of Iranian goods (other than oil), did not import large quantities of Iranian commodities. These two factors propelled the Iranian government into imposing import restrictions on Japanese goods in the 1950s. In order to remove these restrictions, the Japanese government decided in 1960, to grant Iran a loan of US\$17 million. This offer of a loan probably contributed to the conclusion in October 1960 of an Iranian-Japanese trade agreement which was valid for one year and renewable. Under the terms of the agreement, Japan agreed to purchase US\$12 million worth of Iranian produce (other than crude oil).³⁵ Japan, however, failed to buy products to the agreed amount so Iran refused to renew the trade agreement and re-

imposed restrictions on Japanese imports. In January, she replaced the restrictions with a monopoly tax (cif 5%) on Japanese imports.³⁶ This tax was removed when, in July 1964, a new trade agreement, valid for one year, was signed between the two countries. This agreement was renewed for only one more year because Japan did not accede to the "Iranian demands for the purchases of US\$8 million worth of non-oil commodities and US\$4 million worth of crude oil from the National Iranian Oil Company."³⁷

Finally, in order to resolve these commercial disputes, Japan, in November 1968 sent a large trade delegation to Iran. This delegation which was made up of officials as well as leading businessmen, succeeded in concluding a new trade agreement with Iran under which Japan agreed to import 240,000 tons of Iranian liquified petroleum gas (LPG) per year starting from 1970 in return for the non-discriminatory treatment of Japanese imports in the Iranian market.³⁸ The new trade agreement seems to have finally settled the trade disputes between Iran and Japan, as from then on no major commercial conflicts arose between the two.

It was during the above mentioned Japanese trade delegation's visit to Iran that the idea of a petrochemical joint venture was first discussed between the Misui & Co's Chairman (a member of the delegation), and the National Petrochemical Company of Iran.

Table 3.9: Japan's Trade with Iran, (1960-1990)
(US\$ 1,000)

Year	Export	Import	Year	Export	Import
1960	34,656	24,968	1976	1,706,560	4,448,077
1961	42,007	44,286	1977	1,926,416	4,242,932
1962	25,325	88,716	1978	2,691,082	4,243,623
1963	36,111	137,625	1979	925,392	4,271,331
1964	46,831	202,366	1980	1,529,530	4,100,950
1965	58,379	246,939	1981	1,485,520	1,920,062
1966	71,885	362,152	1982	934,904	2,566,883
1967	77,057	528,795	1983	2,819,888	4,231,432
1968	136,689	623,445	1984	1,692,123	2,868,849
1969	157,458	817,582	1985	1,347,653	2,505,828
1970	178,749	995,301	1986	1,144,486	1,383,258
1971	237,546	1,361,353	1987	1,043,202	1,555,595
1972	321,715	1,489,668	1988	807,836	1,164,199
1973	484,170	1,921,643	1989	922,435	1,792,294
1974	1,013,556	4,766,182	1990	1,617,000	3,460,000
1975	1,854,296	4,977,849			

Source: Ministry of International Trade and Industry.

4.3- Japanese Oil Imports from the Middle East

As discussed in Chapter Two, before the Second World War, Japan relied on coal and hydro-electric power for energy. Crude oil and oil products, which comprised about only 10% of her energy requirements were mainly imported from the U.S and the Dutch East Indies. From the beginning of the 1950s onward, however, for various reasons, a large scale shift within Japanese industry from coal to heavy oil and electricity took place. These reasons included a protracted strike by coal miners in 1952, the importation of oil based foreign technology, availability of stable oil supplies at low prices, and so on. By 1960, a large number of heavy industries like iron and steel mills found it much cheaper to replace their coal burning units with heavy oil burning ones. Many thermal electricity-generating plants shifted to heavy oil as well. Japan's petrochemical industry also grew very fast during this period, while the rapid rise in Japanese living standards was accompanied by increased car ownership and by the use of kerosene instead of charcoal for heating, cooking and lighting. Petroleum became the fastest growing industry as well as the leading source of energy for Japan. In both oil consumption and total refining capacity, Japan soon became the third most important nation in the world, after the United States and the Soviet Union.

However, as discussed in Chapter Two, Japan was most deficient in crude oil reserves and production. The domestic oil industry was at best only capable of supplying 1 to 2% of the country's total needs and, hence, Japan's imports of crude oil escalated as her pace of life accelerated. In fact, long before OPEC raised its price of petroleum, these imports had become the single largest drain on Japan's foreign exchange reserves.

In general, Japanese oil imports can be affected by three main factors: First, economic and political factors in oil producing countries such as the discovery of major

new oilfields, pricing of crude oil by the producers, revolution, war, coup d'état, oil export bans to Japan, and oil price disputes; Second, mainly economic and, occasionally, political factors in Japan including implementation and abolition of the foreign exchange quota law, tightening of air pollution control standards, fuel changes in the power generation sector, and import bans or restrictions on particular suppliers in co-operation with United Nations sanctions and in sympathy with U.S. sanctions; Third, other external factors such as policies and activities of international oil companies.³⁹ These three factors, singularly or jointly have affected oil supplies to Japan from the beginning of the industry right up to now and will continue to do so in the future (few examples of the affects of these factors are discussed in Chapter Two).

Here the second one, namely the Japanese domestic factor will be discussed in detail. As oil has the following economic and political characteristics, the Japanese government (principally MITI) has been compelled to assume powers to regulate the domestic petroleum industry. First, from the beginning of the 1960s, oil became the most important energy source and industrial raw material, the single largest import item in terms of value and volume, and also the single largest source of indirect tax.⁴⁰ Second, as noted in the previous chapter, despite its strategic and economic importance, Japanese petroleum imports were being controlled by foreign oil companies. MITI feared that these companies might impose monopolistic prices on Japanese oil firms and, hence, make the Japanese industry as a whole uncompetitive in international markets. Accordingly, MITI aspired to consolidate the domestic oil industry and strengthen the position of Japanese oil firms vis-a-vis international oil companies. MITI has tried to achieve this objective by first utilising the Foreign Exchange Law, then by the enactment of the Petroleum Industry Law (1962), and in the 1970s-80s by the the extensive exercise

of its administrative authority on capacity expansion and oil imports. (See Chapter two for details).

Probably, among the Japanese factors that affect oil imports, the most important one is the oil strategy adopted by MITI, i.e. its consistent policy to reduce the import price of oil. For example, until 1962, when the Foreign Exchange Law was in operation, MITI made full use of it to encourage importers to buy oil more cheaply by adopting actual imported volumes as a basis for allocating foreign exchange. Refiners reacted to this incentive by shifting part of their imports to cheap heavy crude available from the Middle East. As a result, according to M.A. Adelman "until 1962, crude prices to Japanese buyers were probably the lowest in the world".⁴¹ Moreover, ever since the enactment of the Petroleum Industry law in 1962, MITI has tried to prop up the domestic oil industry and increase production of overseas oil under Japanese control in order to weaken the hold of international oil companies over the supply of this vital commodity to Japan.

Another domestic factor which affects Japanese oil imports are environmental protection laws. During the 1950s and early 1960s the lack of industrial pollution control measures persuaded oil consumers to use the cheapest types of oil available. This usually meant burning of heavy crude oil imported from the Middle East (mainly from Kuwait), and heavy fuel oil. However, by 1962, when industrial pollution had become very serious, MITI adopted various measures to reduce the emission of harmful gases and sulphur into the air. This resulted in switching to crudes with lower sulphur contents which in turn caused a change in sources of supply (to Iranian crude).

Finally, the other main domestic factor which affects Japan's oil imports is the change in the pattern of demand for oil products. For instance, in the 1950s and the

1960s, unlike other major industrial nations, industrial demand was far greater than other demands for oil. This in turn precipitated a refining pattern dominated by fuel oil. Japanese refiners responded to this particular pattern of demand by importing more heavy crude than refiners in the United States and Western Europe. Nevertheless, ever since the first oil shock of 1973, there has been a marked change in the pattern of Japanese demand for oil products in which the industrial demand has been steadily falling and private, especially transport, demand has been increasing. There were three main factors behind this change in the pattern of oil consumption. First, a change occurred in Japan's industrial policy whereby the emphasis shifted from heavy and energy intensive industries to promoting knowledge intensive industries such as electronics and computers.⁴² Second, Japanese industry and businesses, with active encouragement of the government (such as financial and tax incentives) developed and adopted various energy conservation technologies and methods.⁴³ Third, with the huge expansion of the GNP in the 1960s and the rise in incomes and living standards, demands for public and private transport rose substantially. These changes have resulted in a reduction in the demand for lower distillates such fuel oil and increased consumption of higher distillates such as diesel and gasoline.

Another domestic factor, as will be explained later, was the tight environmental regulations which severely restricted burning of high sulphur oil by the industry.

These shifts in demand have in turn caused a drop in the imports of heavy crude and a rise in the import of light ones into Japan, which in turn have influenced sources of supply.

Now, the other two factors which affected imports of oil into Japan in the 1950s and the 1960s will be briefly examined. First, oil production in the Middle East rapidly

increased after 1945 with the expansion and development of oil fields in Iran, Iraq, Kuwait and Saudi Arabia. The expanded production coincided with Japan's growing demands for oil. As a result, Japan became quickly dependent on Middle East for around 80% of her petroleum needs (see Table 3.11). Imports of crude oil from the Persian Gulf doubled in value every few years, from \$93 million in 1953 to \$175 million in 1956 and \$369 million in 1960, and from \$917 million in 1965 to 1.86 billion in 1970 and \$3.3 billion in 1972.⁴⁴ Throughout most of the 1950s, Saudi Arabia was Japan's leading supplier of crude, but Kuwait assumed the lead in 1959, and in turn was succeeded by Iran in the early 1960s.

Several factors precipitated the almost total dependence of Japan on Middle Eastern oil. First, the development of vast oil reserves throughout the Persian Gulf region made it the most important oil exporting area in the world to which the Japanese could easily turn. The second reason was that it was preferred for purely commercial reasons. Production costs were relatively low, and price reductions during the 1950s and 1960's, including large discounts extended to Japanese purchasers by Major oil companies, made Middle Eastern exports competitive in the Japanese market. The third factor was that rapid advances in shipbuilding technology dramatically reduced transportation costs between the Persian Gulf and Japan's Pacific coast. As noted earlier, it was MITI's policy to reduce the price of oil which is a basic factor of production to Japanese industry (although this point is disputed by some, see Chapter Two). As the oil from the Middle East was the most competitive in terms of price and, moreover, as oil from that region suited the particular demand pattern prevalent at the time in Japan, imports of oil from the Middle East rapidly increased in the 1950s/60s. However, probably the most significant factor was the creation of close ties between the leading

Japanese oil refineries and major Western oil companies. In fact, the seven largest international oil companies known as "Seven Sisters" which directly or indirectly supplied the major part of the Japanese oil imports in the 1950s/60s, controlled 77.1% of total OPEC oil production in 1972.⁴⁵

As a result of these factors, Japan had, by 1962, become the Middle East's second most important oil market after the U.K.. During the following decade she was also the leading customer for the three largest oil producing states in the region: Iran, Kuwait and Saudi Arabia.

After the Second World War, the import of Saudi oil which was being produced by the Arabian American Oil Company (Aramco), and whose member companies were present in the Japanese market, rapidly increased, peaking at 53.4% in 1951. This was the largest share ever attained by any single country. However, imports from Kuwait raised swiftly after 1956 and overtook imports of Saudi oil in 1959. These two countries maintained a dominance in the Japanese market, accounting for more than 50% of its oil imports throughout the 1950s. The rapid increase in demand for Kuwaiti oil in the late 1950s can be attributed to two Japanese factors: the foreign exchange quota law, which encouraged imports of cheap oil, and the peculiar Japanese demand pattern for heavy fuel oil. Kuwaiti oil had a high sulphur content which was suitable for the production of industrial fuels, as well as making it cheaper than other types of crude. The combination of these two factors made Kuwait the largest supplier of crude oil to Japan from the early to mid-1960s (see Table 3.10).

While these countries did not become dependent on Japan for the sale of crude oil, revenues from the oil exports to Japan played a significant role in financing their development programmes and covering related import costs.

Although Japan purchased most of her oil from the Middle East through American, British and Dutch-controlled companies in the late 1950s and early 1960s, she also tried to bypass them whenever suitable opportunities arose, in order to secure a diverse and stable supply of oil. Japan negotiated long-term petroleum import contracts directly with non-Middle Eastern oil producing countries, and also sought to establish Japanese-owned supplies of crude oil through the development of overseas oil concessions. In 1957-1958, the Japan Petroleum Company secured the exploration rights to the 7200km offshore area of the Saudi-Kuwaiti Neutral Zone on behalf of its subsidiary, the Arabian Oil Company (AOC).

The early 1960s were marked by Japan's efforts to stabilise her supply of crude oil within the Middle East by purchasing significantly larger amounts of oil from Iran. While Iran had consistently ranked only fifth as a source of oil imports in the late 1950s (after Kuwait, Saudi Arabia, Iraq, and Indonesia), by 1966 she ranked first (far ahead of Kuwait), and by 1970 nearly half of all crude oil shipments passing through the Straits of Hormus and bound for Japan originated from Iran. There were two reasons for this. First, Japan sought to minimise the negative impact of any future Arab-Israeli war on their oil supplies. And second, it was due to the Shah's pressure on the Consortium to sell more Iranian oil to finance a massive and expensive programme of national development (as well as to purchase sophisticated arms from the West).

Table 3.10(a): Crude Oil Imports into Japan by Countries of Origin (in 1,000 barrels a day, b/d)
(% of total in brackets)

	1960	1965	1970	1975
Middle East	452 (80.1)	1,338 (89)	2,859 (84.7)	3,541 (78.2)
Saudi Arabia	110 (19.5)	292 (19.4)	490 (14.4)	1,156 (25.5)
Iran	23 (4)	329 (21.7)	1,470 (43.5)	1,122 (24.8)
U.A.E.		8	156 (4.6)	418 (9.2)
Kuwait	218 (38.7)	356 (23.7)	287 (8.5)	387 (8.5)
Neutral Zone	29 (5.1)	248 (16.5)	349 (10.3)	232 (5.1)
Oman			97 (3.0)	129 (2.8)
Iraq	70 (12.4)	96 (6.4)		94 (2.0)
Qatar	2	12	4	3
Pacific Basin(a)	83 (14.7)	108 (7.2)	449 (13.3)	850 (18.8)
Others(b)	29 (5.1)	57 (3.8)	68 (2.0)	137 (3.0)
Total	564 (100)	1,503 (100)	3,375 (100)	4,528 (100)

Notes: (a) Includes Indonesia, Malaysia, Brunei, China, and Australia.

(b) Includes Africa, Venezuela, and USSR.

Source: Campbell 1985, p.134.

Table 3.10(b): Crude Oil Imports into Japan by Countries of Origin (thousands of barrels a day)

Source	1980	1985	1989
Middle East*	3,066,487	2,338,532	2,939,301
Iran	97,613	236,237	439,915
Saudi Arabia	1,416,724	459,342	803,076
Neutral Zone	231,704	206,109	143,439
Kuwait	152,338	57,389	77,921
Iraq	237,504	108,019	181,510
UAE	630,297	754,581	878,589
Qatar	148,834	214,903	246,354
Oman	150,559	301,952	262,662
N.Yemen	914+	--	5,835
S.E.Asia	870,787	570,165	696,598
China	164,103	219,642	267,229
Africa	76,331	43,801	16,753
USSR	1,884	2,637	958
Others	114,725	224,518	188,754
TOTAL	4,294,317	3,399,295	4,109,593

Notes: *- The figures for the Middle East refer to the total of all the countries in rows 3-11.

+ - Bahrain

Source: Hamauzu, in Japan in the Contemporary Middle East (1993), p.60.

3.3.1- Oil Imports from Iran⁴⁶

As discussed earlier, Japan, with one exception, did not import any oil from Iran in the pre-war period. After the war, six out of seven major international oil companies established or re-established their presence in the Japanese market by setting up joint-ventures with Japanese oil companies, or entering into long-term agreements for the supply of crude to independent oil firms. Anglo Iranian Oil Company (AIOC), the other Major, which was the sole producer of Iranian oil, however, stayed out of the Japanese market. So when in 1950, Japan resumed imports of crude oil, no Iranian oil entered her market. Nevertheless, the path for the export of Iranian oil had already been opened since in 1947 and 1948, AIOC had signed long term agreements with Standard Oil of New Jersey (Exxon) and Socony-Vacuum respectively. But only a small quantity of Iranian oil was imported into Japan in 1951 before the production and export of Iranian oil came to a complete halt in June 1951 with the nationalisation of the Iranian oil industry by the government of Dr Mossadeq.

The nationalisation sparked off a prolonged conflict between the Iranian government on one side and the AIOC and the British government on the other, and resulted in the boycott of Iranian oil by all Major oil companies. The Iranian government tried to sell crudes and products directly but there were no buyers because of the risk of legal disputes with AIOC. The only exceptions were a few Italian and Japanese companies which purchased a small quantity of oil from Iran. In the case of Japan, Idemitsu Kosan, an independent oil company which then had no refinery, bought 130,261 kl of motor gasoline and 49,376 kl of diesel oil in 1953. Apart from this, no Iranian oil was exported to Japan in 1952 and 1953.

After the coup of August 1953 which overthrew the Mossadeq government,

Iranian oil was put under the control of a consortium that comprised the seven Majors and CFP of France. Later on some American independents also joined the consortium. The establishment of the Iranian Consortium whose members, with the exception of British Petroleum (the new name of AIOC) and CFP, had their own outlets in Japan, provided Iran with a big opportunity to cultivate the ever expanding Japanese market. Even BP and CFP made long term agreements with Japanese non-affiliates for the supply of Iranian crude. Furthermore, Gulf Oil, which did not have its own refinery in Japan, signed a long term contract for the supply of its share of Iranian crude production with Idemitsu Kosan, which had the largest product market share in Japan.

Although Iranian oil exports to Japan began soon after the establishment of the Consortium, her share of the market remained very small until 1960. Iran's share of the Japanese oil market, however, rose sharply from 4% in 1960 to 43.5% in 1970 and continued to rise until 1973. She overtook Kuwait in 1966 as the largest supplier of oil to Japan and maintained that position until 1975 when she was supplanted by Saudi Arabia. Iran was in effect the largest crude supplier to Japan during her high economic growth period of the 1960s and early 1970s.

Many factors, domestic as well as external, contributed to the dramatic rise in the import of Iranian oil into Japan in that period. The two most important domestic factors were the tighter control of SO_x emission from factories and the demand pattern for petroleum products in Japan.

With the development of heavy and chemical industries and the rapid increase in power generation, Japanese oil consumption sharply increased from 34,000 barrels a day (b/d) in FY1950 to 625,000 b/d in FY1960. As a result of the increasing use of oil, Japan faced serious air pollution and extensive environmental damage in industrial areas. The

situation had deteriorated so much that even the government which had given top priority to industrial production and economic development became concerned, and by the end of the 1950s was forced to take action to protect people. In 1962, the government introduced a law which regulated the emission of SO_x from factories.⁴⁷ This law had a profound impact on Japanese crude imports as refiners and industrial users of oil, particularly electric power companies, had to comply with the new law by increasing imports of crude with lower sulphur contents. The weak financial positions of refiners did not allow them to invest in desulphurisation plants fast enough, and so they had to rely increasingly on imports of lower sulphur oil to meet the rapidly rising demand.

Iranian Heavy crude oil had the characteristics to meet the requirements of the law, and so was favoured by the refiners. Its sulphur content was much lower than the Arabian Heavy and Kuwaiti crude, and even lower than the Arabian Light, yet the consortium priced it very competitively compared with its rivals. The economic value of that crude sold at heavy oil's price was highly appreciated by Japanese buyers, who rapidly increased their purchases from Iran.

As a result of the enactment of the first law concerning the control of SO_x emission, imports of Iranian oil more than doubled from 40,000 b/d in 1961 to 98,000 b/d in 1962. Imports of Iranian oil rose from 20,000 b/d in 1960 to 1.649 million b/d in 1973 when it peaked. The rate of increase in the imports of Iranian Heavy into Japan during that period was particularly impressive. It rose strongly during the 1960s from 3,000 b/d in 1960 and peaked at 1.12 million b/d in 1971. Imports of Light and other types of Iranian oil also increased during this period, although at a lower rate (see Table 3.12). The Iranian crudes became so important to Japanese refiners that they built

refineries solely for them in order to maximise operating ratios and yields from them.

Also during this period, the unique Japanese demand pattern for industrial fuel oil changed very little which further helped the Iranian crudes.

There were external factors as well which greatly contributed to the exports of Iranian oil to Japan. First, the Iranian Consortium was constantly being pressed by the Shah to increase production and export of oil so that his government would receive enough foreign exchange to carry out developmental programmes as well as to enable him to purchase sophisticated arms from the West. Due to these pressures, and for the political stabilisation of the Shah's regime which was in their own interests as well the West's, the Consortium vigorously promoted Iranian oil in foreign markets. The Japanese market was the most appropriate candidate for this purpose because her demand for crude oil was increasing by leaps and bounds and, moreover, her market was large enough to absorb increasing amounts of oil from Iran without reducing exports from other sources. So the Consortium members granted Japanese refiners loans at concessionary rates in order to expand their capacity, in exchange for accepting Iranian crude on a long-term basis. Second, the international oil Majors whose main profits lay in upstream, i.e. oil production, and not in refining, found the expanding Japanese market the most suitable outlet for their crude produced in the Middle East and especially Iran. The other attraction of the Japanese market for the majors was that in the 1960s the U.S. government introduced restrictions on the imports of foreign oil into the country and, thereby, denied them the world's largest oil market. So the majors increasingly turned their attention to the second biggest oil market in the non-communist world, i.e. Japan.

In conclusion, domestic as well as external factors helped Iran to capture the

largest share of the Japanese market for oil in the 1960s/early 1970s. However, as noted in the previous section, the Iranian government did not consider the oil exported to Japan by the Consortium as her own exports and on several occasions pressed Japan's government to buy oil directly from the National Iranian Oil Company. But as Japanese refiners (affiliates and non-affiliates alike) were bound by the terms of their contracts with the Majors to buy oil only from them, they were not in a position to do so. This is one of the biggest anomalies of the Japanese oil industry. On one side the government was trying to expand production of oil under Japanese control and reduce the dependence of Japan on the Majors for oil, and on the other hand was not able or willing to accept untied oil from Iran. This was probably due to pressure from the Majors which did not want Japan to have independent access to overseas oil reserves and, moreover, did not want to lose their shares in the huge Japanese market. It could also have been due to Japanese fears of jeopardising their relations with the Majors, which in their opinion were providing Japanese industry with a very cheap factor of production (see Chapter Two).

After the first oil shock of 1973, Iran, which had assumed nominal control over her oil production and marketing, adopted an inappropriate (in the Japanese buyers' opinion) pricing policy which made her crude more expensive than other producers. Furthermore, with the enactment of new stricter environmental laws, the Iranian Heavy lost favour with Japanese refiners and its market share rapidly deteriorated as different oil which met the new SO_x emission standard was imported. Finally, in 1975, Iran lost her position as the top oil exporter to Saudi Arabia.

Table 3.11: Japanese Imports of Iranian Crudes (1960,1980)
(1,000 barrels a day b/d)

Year	Light	Heavy	Sassan	Rostam	Ferdun	Other	Total
1960	17	3		--	--	--	20
1961	21	19		--	--	--	40
1962	23	75		--	--	--	98
1963	38	121		--	--	--	159
1964	44	196		--	--	--	240
1965	56	238		--	--	3	297
1966	79	394		--	--	3	476
1967	134	595		--	--	--	729
1968	219	669		--	--	9	897
1969	266	918	21	1	--	12	1,218
1970	339	1,071	45	5	--	9	1,469
1971	470	1,120	37	5	--	5	1,637
1972	547	1,014	20	10	--	--	1,591
1973	652	975	15	4	--	3	1,649
1974	450	773	3	11	--	7	1,244
1975	416	674	16	14	1	2	1,123
1976	322	569	13	12	16	--	932
1977	239	541	10	5	21	4	820
1978	250	493	13	--	22	7	785
1979	168	259	20	9	18	5	497
1980	96	118	13	4	27	8	266

Notes: Sassan, Rostam, and Ferdun are the name of Iranian oilfields whose oils have special characteristics in terms of sulphur contents, gravity, etc.

Source: Petroleum Association of Japan.

4.4- Japanese Investments In the Middle East

4.4.1- The Background

In comparison with other developed countries, Japan did not begin foreign investment of any significance until the second half of the 1960s. From the start of the 1970s however, such investments expanded rapidly and increased especially during 1972-73. In 1973, the year of the first oil shock, foreign exchange licences and notifications for foreign investments reached \$3.5 billion.⁴⁸ (See Table 3.12 for statistics up to 1970).

The history of Japan's overseas investments can be divided into three periods:⁴⁹

(1)- 1951-1958: Small-scale investments (but major for Japan at that time) were made in Portuguese Goa and Malaya for the development of mines. In addition, some trading firms established affiliated companies in advanced countries.

(2)- 1959-1964: Domestic demand for resources directed investments into resource development, with petroleum getting the lion's share (Saudi Arabia and Kuwait). Investments were also made in South East Asia, Europe, and Africa.

(3)- After 1965: The huge growth of the domestic economy boosted the need for natural resources. Investments were made in Latin America, Canada, Africa and Australia. Labour shortages and wage increases at home combined with an improved investment environment in Southeast Asia directed further investment into the region.

During the 1960s two new developments necessitated further foreign investments. First, due to the end of the post-war baby boom and also because more school-leavers were going into higher education, further labour shortages accrued. Second, later in the decade the government, due to the unexpectedly rapid increase of the surplus on the balance of payments, changed its policy on foreign investments and actually began to promote it.⁵⁰

By March 1971, one-third of Japan's foreign investments were in the development of natural resources industries, of which one half was accounted for by mining alone.⁵¹ (See Table 3.13). Due to the dependence on overseas sources of oil, the largest mining investment (\$328 million) was in the Middle East (by the Arabian Oil Company), from where Japan imported most of her oil. (See Table 3.14).

With few exceptions, Japanese investments in the Middle East did not really start to increase until after the first oil shock of 1973. As mentioned before, the domestic demand for resources directed Japanese investments into resource development with petroleum getting the lion's share. The bulk of "direct investments" or "overseas direct operations" until 1971 went into two oil concessions in the Middle East. (See Table 3.15).

By the end of 1969, Japan was the second biggest investor in the Middle East (far behind the U.S) with total investments of \$306 million. (See Table 3.16).

The first major Japanese investment in the Middle East was in the form of the Arabian Oil Company (AOC) which was a subsidiary of the Japan Petroleum Company. The AOC won the exploitation rights to the 7200 km² offshore area of the Saudi-Kuwaiti Neutral Zone in 1957-58. Japan won these rights by offering precedent-setting terms: the Saudi and Kuwaiti governments received a 56-44 and a 57-43 division of the profits respectively. This occurred in an era when a 50-50 split of the profits between the Middle East and Western oil companies had only recently become standard. Furthermore, the Saudi and Kuwaiti shares were to be based on all profits earned by the AOC, from the production and the transportation of the oil to its refining and marketing, rather than on the profits from the crude oil sales alone.⁵²

Apart from the AOC, there was no other Japanese investment in the Arab oil producing countries between the end of the WWII and the oil shock of 1973.⁵³

Table 3.12: Japanese Overseas Investments (approved), by Number of Cases and Amount by Year (1951-1970)

Fiscal Year	Cases	Amounts (US\$ 1,000)
1951-1958	445	143,192
1959	123	53,062
1960	151	92,729
1961	133	164,811
1962	179	99,425
1963	223	125,977
1964	193	120,291
1965	209	156,739
1966	253	227,008
1967	306	274,868
1968	384	557,174
1969	568	667,579
1970	768	913,449
Total	3,935	3,596,306

Note: Fiscal year, from April to March.

Source: Ballon, Roberts, in Aussenwirtschaft, Vol, 28.3/4,
Sep/Dec 1973, p.130.

Table 3.13: Japanese overseas investments by industry and number of cases (approved by March 1971),
(US\$ 1,000,000)

Industry	Amounts	%	Number of Cases
Development :	1,210	33.7	385
Mining	1,126	31.3	195
Agriculture & forestry	57	1.6	94
Fisheries	27	0.8	96
Manufacturing	962	26.8	1,391
Commerce	370	10.3	1,112
Banking & insurance	321	9.0	115
Construction	37	1.1	32
Branches	32	0.9	380
Others	658	18.3	520
Total	3,596	100.0	3,935

Source: Same as Table 3.12.

Table 3.14: Japanese Overseas Investments by Selected Industries and Regions (approved by March 1971)

(US\$ 1,000,000)

Region	Mining	Manufacturing	Commerce
North America	117	239	293
Latin America	87	273	17
Middle & Near East	328	4	0.5
Red-Asia	268	334	18
Europe	6	36	28
Africa	58	24	0.6
Oceania	200	49	11
Total	1,126	962	370

Source: Same as Table 3.12.

Table 3.15: Japanese Overseas Investments, by Region and Type,
(Approved by March 1971)
(US\$ 1,000,000)

Region	Stock Acquis'ion	Loans	Overseas Direct Operations	Branch	Total (%)*
North America	500	369	33	7	911 (24.4)
Latin America	289	264	3	1	558 (15.5)
Asia	334	419	8	16	779 (21.7)
Europe	109	522	0.5	5	638 (17.8)
Near & Middle East	5	--	328	0.1	334 (9.3)
Africa	31	60	0.1	0.3	92 (2.6)
Oceania	62	217	--	0.1	280 (7.8)
Total (%)*	1,334 (37.1)	1,854 (51.6)	375 (10.4)	32 (0.7)	3,596 (100)

Note: * Percentage of the total in brackets.

Source: Same as Table 3.12.

Table 3.16: Distribution by Industry and Region of Foreign Investments by Selected Countries by the End of 1969 (US\$ 1,000,000)

	U.S.	U.K. a	West Germany	Japan b
Total	70,763	13,405	4,814	2,683
By Industry:				
Mining	5,635	1,054	200	892
Petroleum	19,985	(4,200)	102	892
Manu- facturing	29,450	7,067	3,558	722
Others	15,693	5,284	954	1,070
By Region:				
W.Europe	21,554	2,347	2,675	303c
North America	21,075	3,089	799	720
Latin America	13,811	1,083	896	513
S.E. Asia	3,363	1,521	103	604
Middle East	1,829	65	29	306
Africa	2,970	2,558	259	79
Oceania	3,099	2,654	53	158
Others	3,061	88	---	---

Notes:

a- Balance at the end of 1968, excluding petroleum, banking, and insurance. Petroleum, balance at the end of 1966.

b- Balance of approved investments.

c- This figure includes a very small amount in East Germany.

N.B: Classification varies slightly from country to country.

Source: Same as Table 3.12.

3.4.3- Japanese Investments in Iran

Contrary to the situation in other Middle Eastern countries, Japan did make investments in Iran before the 1973 oil crisis. In all about 20 cases of investment were made before the crisis, (see Tables 3.17 & 3.18) mainly in banking and trading and a few in manufacturing of electrical goods. The first investment was by Marubeni Corp, which set up a wholly owned subsidiary in August 1956.⁵⁴ Furthermore, in 1968, the Japan-Iran Investment Council was established to assist Iran's economic development.⁵⁵

The Japanese investments in Iran, like those in other developing countries, was a response to her import substitution industrialisation programme. Unlike Asian countries, however, which aimed at export-oriented industrialisation, Iran had not built any free trade zone that allowed one hundred percent ownership by foreign export industries. Nevertheless, it also did not impose compulsory export quotas, local content ratio, or mandatory employment of local staff at any level on the foreign investor.⁵⁶ Therefore, Japanese joint ventures in Iran were not worried about localisation problems, which were common in most developing countries. In fact, the Iranian government encouraged the employment of foreign manpower in order to cope with a shortage of managers, engineers and technicians especially after the first oil shock. Furthermore, the Iranian partners in Japanese joint ventures generally liked to employ Japanese rather than Iranian factory managers, engineers, and technicians because the cost of their employment was cheaper in consideration of their experience and skill. The Iranian partners often commissioned factory and production management by the Japanese so that their initiative and influence in management, in particular production management, was by far greater than their minority holdings.⁵⁷

Japanese investments in Iran greatly increased after the oil shock of 1973, and the

latter became virtually the only country which hosted Japanese manufacturing investments in the Middle East.

Table 3.17: Number of Foreign Investments in Iran

Country of Origin	1950s	1960s	1970s	Total
United States	3	20	22	45
United Kingdom	1	6	20	27
France	1	3	14	18
West Germany	0	10	17	27
Switzerland	0	4	6	10
Japan	0	5	15	20
Others	1	16	14	31
Multinational	0	5	12	17

Notes:

- (1) Foreign investments up to August 1976 are included.
- (2) Classified by the date of decree.

Source: Ministry of Economic Affairs and Finance.
List of Foreign Investments in Iran.

Table 3.18: Flow of Foreign Private Capital and Loans through the Centre for the Attraction and Protection of Foreign Investments. (IR million)

Country of Origin	1968/69	1969/70	1970/71	1971/72	1972/73
U.S.A	855	2696	560	502	349
West Germany	178	125	720	295	131
U.K.	242	118	331	268	29
France	68	99	117	127	102
Japan	--	10	129	55	221
Others	241	216	461	225	504
Total	1583	3264	2318	1472	1336

Source: Bank Markazi Iran, Annual Report and Balance Sheet 2535

3.5- Japan's Involvement in the Politics of the Middle East

Japan had not shown much interest in the politics of the Middle East until she was struck by the world-wide oil embargo that came immediately after the outbreak of the Fourth Middle East War in October 1973. Before that, Japan's concern with the Middle East problem, including the Palestinian issue, had been secondary, both at government and private levels, although economic ties with the region had been growing steadily.⁵⁸ But the 1973 Arab oil embargo pinpointed the paradox in Japan's foreign relations with the Middle East. Tokyo had a policy toward the Middle East, but it lacked a diplomacy to give that policy a recognition in the area. Prior to November 1973, the Japanese government had adopted two interrelated positions on the Arab-Israeli conflict:

With the United States and Western European countries, Japan had backed U.N. Resolutions 242 (Nov 22, 1967), which called on Israel to withdraw from areas captured during the October 1967 War.

Japan had also supported Resolution 2628 (Nov 4,1970), which equated respect for Palestinian rights with a just and lasting settlement of the situation in the Middle East.⁵⁹ Senior officials had constructed these two elements of the Middle East policy, believing that they would be the minimum requirements for peace in the region. But they had failed to put these two elements into one comprehensive statement. Furthermore, Japanese officials had informed only one Persian Gulf leader, King Faisal of Saudi Arabia who visited Japan in May 1971, of their views on Israeli withdrawal and the Palestinian issue. As a result, the "Arab countries were largely unaware of Japan's recognition of the legitimate right of Palestinian self determination".⁶⁰

The lacklustre Japanese policy on the Middle East was not inconsistent with her interests in the region. Until late 1973, Tokyo had regarded Major Western oil companies as the main channel for the import of Middle Eastern crude oil into Japan.

However, even before the 1973 War, Japan found itself linked to the Middle East problem, when in 1972, shootings by young Japanese terrorists left 26 dead at Israel's Ben Gurion Airport.⁶¹ From October 1973, however, when the first oil crisis followed the Forth Arab-Israeli War, it was no longer possible for Japan to ignore the link between oil and the politics of the Middle East.

3.6- Conclusion

The preceding pages demonstrate that, contrary to common belief, Japan's connections with the Middle East go back a long way. These links, however, before the Meiji Restoration were indirect and of no great significance. But after World War One, and especially during the 1920s/1930s, diplomatic and trade relations between the two flourished, and Japan became one of the biggest trading partners to some of the

countries in the region. Furthermore, with Japan's joining of the Axis Powers in the 1930s, her political and strategic interests in the Middle East also grew, and she adopted an active Islamic policy in order to both deepen her ties to the region as well as to use it against her enemies like the Great Britain, Russia and China in Asia. With the start of the Pacific War, she no longer had the resources to implement this policy and, moreover, her links with the Middle East were severed by the Allies who had occupied the region.

After the end of the Occupation, Japan, which no longer had any imperial ambitions and anyway was bound by the terms of various treaties with the United States to relinquish such ambitions, relied on the latter for her security and followed the U.S. policy on international affairs. Japan instead, concentrated on her economic development. As a result of the industrial strategy which she adopted after the war, and the types of technologies and industries that were imported into the country, she became increasingly dependent upon imported oil as a source of energy and industrial raw material.

On the other hand, with the development of huge petroleum reserves in the Middle East by the major international oil companies after the war, that region became the largest and cheapest source of oil in the world. These oil companies which dominated the Japanese oil industry as a result of American policy towards Japan, as well as their own business strategies, imported Middle Eastern oil into Japan in massive quantities. Consequently, Japan became heavily dependent on the region for her most vital imported commodity. However, as this oil was brought to Japan by international Majors and as she had no active foreign policy, she grossly neglected political developments in the region. It seems that successive Japanese governments believed that their support for the Arab

cause in the U.N would be sufficient for Japan to be considered as a friendly nation by the Arab world. The Japanese officials were actually shocked when in the course of the oil embargo against the Western countries (mainly the United States and the Netherlands) Japan was termed as an "unfriendly" nation. To remedy this situation, the government of Japan took various diplomatic and economic measures, including issuing statements in support of the Arab countries and condemning Israel, and offering various aid and financial packages.⁶² One such package, as Chapter Seven will show, offered to Iran in 1974, included a large, low interest loan for the petrochemical joint venture between the two countries which by then, because of inflated construction costs, had ran out of the money. It was hoped that by offering such incentives, Japan would receive secure oil supplies from Iran, who had not participated in the oil embargo.

Japan, by the 1960s had become aware of her acute dependence on foreign countries for almost all of her raw materials and so began vigorous investment in the development of overseas resources, and the single biggest investment went to the Middle East for the development of oilfields in Saudi Arabia and Kuwait.

Furthermore, Iran, which by the 1960s had become the largest supplier of oil to Japan, became the only destination for Japanese manufacturing investments in the region as the latter responded positively to the former's policy of import substitution industrialisation. Japanese companies set up joint-ventures with local partners in Iran. These investments became quite important both in terms of numbers and their contributions to the industrialisation of Iran. However, Iran was not happy with the structure of her trade with Japan and on several occasions imposed restrictions on the imports of Japanese goods. These differences were solved by a group of Japanese officials and businessmen who visited Iran in 1968. It was during the visit of this group

that the idea of a petrochemical joint venture was first discussed between the two countries. The study of the formation and dissolution of this joint-venture will form the basis of this research and will be discussed in detail in forthcoming chapters.

Notes

1. Rubai is a type of traditional Persian poem which Omar Khayam is famous for.
2. Japan Foundation (1977), p.8.
3. Ibid, p.9.
4. Ibid, p.72.
5. This section is based on Shimizu, H., (1985), (1986), (1990), and (1991).
6. For details of Japan's diplomatic relations with various Middle eastern countries in the pre-World War One, and in inter-war years see above references.
7. Shimizu (1985), P.70.
8. Shimizu (1986), P.76.
9. Shimizu (1986), p.77.
10. For Japan's commercial relations with the Middle eastern countries see Shimizu, op cit.
11. Mahmoud Khan Boder, The Iranian Ministry of Finance, quoted in Shimizu (1986), p.246.
12. Shimizu (1986), p.247.
13. In the pre-war period Minister was the highest position in an embassy below the rank of ambassador. This position seems to have been demolished in the post-war period.
14. Shimizu (1986), p.253.
15. Schumperter, E.B. (1940), pages 239 and 267.
16. Longrigg, S.H. (1954), p.103.
17. Mitsubishi Shoji (1986), p.474.
18. See Chapter Two for the details on the structure of the Japanese oil industry in prewar years.
19. See Drollas, L., and Greenman, J. (1989) for the details of the agreement.
20. See Chapter Two for further details.
21. Twitchell, K.S. (1953), p.154.

22.A confidential report presented to the Euro-Asian Bureau of the Japanese MOFA by T. Mitsuchi, May 1937, Diplomatic Records Office (DRO), No; E.4.2.4-1-1.

23.Japan Statistical Yearbook (1959), p.257.

24.Shimizu (1985), No.1, p.24.

25.For further information about these proposals see; Shimizu (1984), pp.278-279.

26.There is little information about Han Wakabayashi. However, there is a book written by him; Wakabayashi, H. (1938).

27.Ibid. pp.1-9.

28.Shimizu (1985), p.19.

29.Ibid, p.24.

30.For a detailed discussion on the re-establishment of Japan-Middle East diplomatic relations in the post-war period see Burridge, J.M., (1988), chapter 4.

31.Morse, Ronald A. (1986), p.35.

32.Ibid.

33.Shimizu, H., in "The Japanese Approach to the Contemporary Middle East", p.19.

34.Ibid, pp.22-23.

35.Ibid, p.16.

36.Ibid.

37.Ibid. Also see JETRO (1969), p.43.

38.Ibid, and also JETRO (1969), p.45.

39.Hamauzu, T. (1991), p.4.

40.Ibid, p.14.

41.Adelman, M.A., p.242.

42.For an in-depth analysis of Japan's industrial policy in the 1950-1980s period see Matsutani, T., (1985); Ostrom, D.R. (1984) and Johnston, C. (1982).

43.See Barrett, Brenden F.D. and Therivel, R. (1991), pp.40-42, for the Japanese efforts on energy conservation.

44.Morse (1984), p.36.

- 45.Hamauzu (1991), p.6.
- 46.This section draws heavily from Hamauzu (1991).
- 47.For the details of this law and Japanese governmnets measures to reduce SO_x emission and other environmental regulations see Barrett (1991), op cit, chapters 3 to 6.
- 48.Yamada, Mitsuhiko, (1986), p.3.
- 49.Ballon, Roberts (1973), p.129.
- 50.Ibid, p.130-131.
- 51.Ibid, p.134.
- 52.Morse, R.A. (1986), p.38.
- 53.See Oriental Economist, Vol 48-840, October 1980, pp.37-38.
- 54.Oriental Economist, Vol 48-839, September 1980, pp.53-57.
- 55.Ozawa, Terutomo, in Columbia Journal of World Business, vol 9.3, Fall 1974, p.39.
- 56.Hamauzu, T., 1991, p.35.
- 57.Ibid. For an in-depth analysis of Japanese manufacturing joint-ventures in Iran during 1970s, see above references.
- 58.Shimizu, Manabu, in Japan Quarterly, October-December 1988.
- 59.Yoshitsu, Michael M. (1984), p.1.
- 60.Ibid.
- 61.Ibid.
- 62.See Burrridge (1988), op cit, chapters 5 to 9 for an in-depth analysis of the Japanese response to the Arab oil embargo of 1973.

CHAPTER FOUR

THE ROLE OF OIL IN THE INDUSTRIAL AND ECONOMIC DEVELOPMENT OF IRAN

1.0- Introduction

In Chapter One, it was hypothesised that in order to understand why business joint ventures are entered into, one needs to look at the strategy of its participants and the goals that they hope the enterprise will fulfil for them.

It was argued in the last chapter that it was access to Iranian oil reserves which enticed the Japanese to support the petrochemical joint venture with Iran. This chapter will argue that it was for reasons of industrial and economic development that Iran considered expanding her petrochemical industry. However, as she lacked the necessary inputs, such as capital, technology and access to foreign markets, she sought the co-operation of a foreign partner(s) who could offer her such advantages.

In the following, therefore, the development of the Iranian petroleum industry which the petrochemical industry is a part of, will be discussed. Moreover, the impact of oil revenues on the economic development of the country, and the role that the industry has played in Iran's industrialisation will also be analyzed in detail. The role of the state in process of the industrialisation and its industrial policy will also be examined. Finally, the chapter will discuss why the petrochemical industry was chosen as the basis of Iran's industrial and economic development.

In general, three different phases can be distinguished with regard to the industrial development of Iran and the role that the state played in such a process. The first phase, which extended from the early Nineteenth Century to the early 1920's, was a period of gradual disintegration of the traditional state and the almost total lack of concern on the part of the state for the economic development of the country. The main

feature of the transformation of the Iranian economy during this period was the integration of the national economy into the world market under a free trade system.

The inter-war years, which formed the second phase, was a period of development of the modern national state, and the start of state intervention in the national economy and support for the industrialisation process. In this phase, oil revenues' contribution to the economic and industrial development of Iran was very small. The third phase, which began with the conclusion of a new oil agreement with the Consortium in 1954, was a period in which a massive amount of oil revenue and foreign capital flew into Iran and the state took a much more direct and interventionist approach towards the process of industrialisation of the country. This phase, however, came to an end with the 1979 revolution.

For the purpose of clarity, using major historical events as dividing lines, the above three phases will be broken down into the following periods: Nineteenth Century to 1921, 1921-1941, 1941-1953, and 1954 to the late 1960s.

2.0- Mid-Nineteenth Century to 1921

2.1- The Political and Economic Conditions

On the eve of the 20th Century, Iran, despite her glorious past, was one of the most backward and impoverished countries in the world. In fact Iran had been in a steep decline since the late 16th Century, but her problems deepened with the accession of the Qajar Dynasty to the crown in the 18th Century. During the Qajar rule (mid 18th Century to 1926), there was a considerable decline in all aspects of the economic life of the country as compared to the 17th Century, and there was a significant contraction of foreign trade.¹ The Qajars' misrule and corruption caused the country to lose large parts

of her territory in central Asia and the Caucasus to the newly emerging Russian Empire, and brought about a gradual disintegration of the state apparatus. This disintegration laid the grounds for the intervention of major foreign powers, namely Russia and Great Britain, in Iran's internal affairs.

A major feature which differentiated the medieval society of Iran from Europe was the existence of pastoral nomadism. Even by the Nineteenth Century, about half of the population of Iran was composed of nomads.² The coexistence of the settled and pastoral nomads' methods of production which was to a large extent conditioned by natural and climatic circumstances, exerted an important influence on the overall structure of the society well into the 20th Century. Moreover, during the medieval period (from the 11th Century AD to the 19th Century), the main features of the socio-economic structure of the country remained more or less intact.³ So, despite few attempts in the mid to late 19th Century to reform the state, Iran entered the Twentieth Century with an undeveloped agrarian economy and backward modes of production.

However, the politico-economic system of the country had begun to disintegrate under the impact of Western capitalism during the 19th Century and, by the first two decades of the 20th Century, important changes had taken place which undermined the role of the traditional state.

The key factor in this transformation was the integration of the Iranian economy into the world market, which was highly conditioned by the rivalry between Russia and the U.K.. The already weak structure of the Qajar state was further shaken by the interference and rivalry between the two above powers which prevented various reform movements initiated by the higher ranks of the state administration from succeeding.⁴

Failure of these attempts to restructure the state administration created a

cumulative process of political disintegration which, by the end of the 19th Century, led to the total breakdown of the central state's authority. Moreover, persistent financial problems like chronic budget deficits and deteriorating economic conditions played a major role in this process of disintegration.⁵

The deepening financial crisis was heightened by the expansion of domestic and foreign trade and the commercialisation of agriculture towards the end of the 19th Century, led to the sale of offices and titles, leasing out state departments (like customs, post, and telegraph) to private individuals, and most important of all, to granting of concessions to foreigners.⁶ The most important of these concessions was that of an oil concession to William Knox D'Arcy in 1906 which greatly influenced Iranian politics and economy in the 20th Century.

As mentioned earlier, the main channel of the integration of the Iranian economy into the world economy in the 19th Century was through foreign trade. In fact, from the early 19th Century up to the beginning of the First World War there was rapid growth in foreign trade. Total trade (imports plus exports) in real terms increased by three times in the first half of the century and four times during the 1860-1940 period.⁷ Although this rate of expansion in foreign trade was lower than the rate of increase in other Middle Eastern countries during the same period, it was significant enough to bring about major changes in the Iranian economy and society.

Iran, like other Middle Eastern countries, had a lopsided trade structure, as her imports were mostly composed of manufactured goods, mainly textiles, tea and sugar which formed more than 80% of imports. Her exports, with the exception of carpets, were largely composed of raw agricultural products. Moreover, her foreign trade was dominated by Russia and the U.K. who together controlled more than 80% of the

imports and exports.⁸ Another feature of Iran's foreign trade during this period was the system of capitulations which had been imposed on the country since the 1828 treaty with Russia and other treaties with various trading partners. This system of capitulations caused the country to lose her tariff autonomy which she did not regain until 1928.⁹

In spite of rapid growth in trade, there was no foreign direct investment in productive activities such as plantations or mining, and all of the foreign capital which flew into the country in the latter half of the 19th Century was directed towards commerce, banking, road construction, real estate, post and telegraph.¹⁰ However, during this period a few attempts were made to set up modern manufacturing industries based on imported technologies, both by Iranian merchants and foreigners. But very few of these factories actually started production and none could survive for long.¹¹ The reasons for the failure of these factories were the small size of the domestic markets, due both to foreign competition and low income levels, lack of adequate legal and political protection, insecurity, inadequate transportation, and dumping by Russian companies.¹² These unsuccessful attempts are, however, indicative of what became the predominant trend in the industrialisation of Iran during the 20th Century. More precisely, as the evolution of indigenous small commodity producers into higher organisational and technological forms of production were blocked by foreign competition and other factors,¹³ Iranian industrialisation took the form of the transplantation of modern industry from above, namely, through state intervention, indigenous merchant capital, foreign capital, or a combination of these, and based on imported technology.

By the turn of the century, Iran was engulfed in a deep political, economic, and social crisis. The expansion of export cash crops at the expense of subsistence farming, together with the competition of cheap foreign imports which had diminished the

livelihood of traditional handicraftsmen, and the failure of the modern manufacturing industries had created an acute situation of shortages of basic foods and unemployment.¹⁴ Moreover, the transformation of the Iranian economy during the 19th Century had created new functional needs which the semi-tribal/semi-bureaucratic state was unable to meet. This situation led to a rapid disintegration of the state by the late 19th/early 20th Century and, in fact during this period the state itself had become the main source of insecurity and instability in the country.¹⁵

It was against this background that the Constitutional Revolution of 1906-1907 took place. One of the most important factors which united the various social classes with opposing interests who took part in the revolution was the need to find a remedy for the deep economic crisis of the country.¹⁶ The revolution did not attempt to replace the Qajar Dynasty, but instead it sought to restrict its dictatorial powers by the promulgation of a constitution and the establishment of a parliament (Majlis).

The semi-liberal constitution of 1906 and its supplementary amendments of 1907, however, failed to undermine the power of the dominant ruling classes, namely, landowners and the merchant bourgeoisie, or to radically alter the backward structure of the Iranian economy. As a result, the revolution did not succeed in its main aim of lifting the economy out of crisis.

In addition, the attempts of the first two parliaments to construct a new centralised state machinery failed due to strong resistance of internal reactionary forces led by the newly crowned king, and the interference of outside powers, particularly Russia. Due to these internal conflicts between 1911 and 1921, the country was subject to immense political chaos and economic disruption.¹⁷

There were, however, two major external developments during this period which

had significant ramifications for the future course of political development in Iran. The first one was the 1917 October Revolution in Russia and the second was the rise of the oil sector as a major source of foreign exchange and government revenue. Both of these developments contributed in their own way, to the rise of the centralised and authoritarian regime of Reza Shah.

The October Revolution caused a major shift in Russian policy towards Iran (during the Lenin's leadership), as the new Soviet government abolished the Tsarist capitulations, cancelled all loans and obligations of the Iranian government and recognised the rights of Iran as a sovereign state. Consequently, the British government, under internal and international pressure, abolished their capitulations, especially the 1919 treaty whose terms were equivalent to the establishment of a British protectorate in Iran. The old power rivalry suddenly stopped and Iran was freed from its semi-colonial status. Moreover, the Russian Revolution also strengthened and radicalised popular movements in Iran which in turn contributed to the rise of Reza Shah's authoritarian regime.

2.2- The Development of the Iranian Oil Industry

As we mentioned above, the rise of the oil sector as an important source of foreign exchange and government revenue in the 1920s had major implications for the course of political developments in Iran and the rise of the Reza Shah's regime. As a matter of fact, oil had been discovered in Iran long before that, but it took many years before oil revenues had any impact on the country's economy.

In 1892 the French geological magazine; *Annals des Mines*, published a report on the prospects of oil discovery in Iran. This report was based on the investigations of a

French scientific mission which had been sent to Iran in the early 1890's. This report, however, did not interest potential investors before 1900, when a senior Iranian civil servant brought the matter to the attention of European financiers, among whom was William Knox D'Arcy from Britain. D'Arcy, who realised the great potential of oil reserves in the south and southwest of Iran, entered into negotiations with the Iranian government for an oil concession.¹⁸ The British government, which saw the long term benefits of such a concession, actively supported D'Arcy by all the diplomatic means at its disposal.

In 1901 the negotiations resulted in an agreement between the government of Iran and William Knox D'Arcy which provided for a concession to the latter for a 60-year exclusive right to "search for, obtain, exploit, develop, render suitable for trade, carry away, and sell natural gas, petroleum, asphalt, and opzokerite" ¹⁹ throughout the whole the Iranian empire, with the exception of the five northern provinces ²⁰ which were under the influence of Russia. The concession covered an area of 500,000 square miles- an area greater than that of France, Great Britain and Germany put together. It also granted D'Arcy the exclusive right to lay pipelines to the Persian Gulf,²¹ a privilege which proved to be D'Arcy's greatest barrier against potential competitors. Also all land taxes and import duties were waived.²²

In return, D'Arcy and his companies were to pay the Persian²³ Government, within a month of their formation, twenty thousands pounds in cash and the same amount in company stock, plus 16% of their net profits per annum.²⁴ In addition, a fixed sum of 2,000 tommans per year was to be paid to the government in lieu of taxes.²⁵ The most important issue which was embodied in the concession was the linking of royalty payment to profits. This, as will become clear later, raised numerous problems

and difficulties. The Iranian government was hoping that the industry would be in a continuous state of prosperity and so the concession would provide it with a steady income for a long time.

The company, which was set up by D'Arcy to explore for oil in southwestern Iran, began its exploration activities in 1903, but it was five years before the company found oil in commercial quantities. During this time D'Arcy ran out of money and began to search for new capital in London, but no one was interested. At the same time the Royal Navy was considering the substitution of oil for coal in British ships. As Britain had no indigenous oil reserves, the Navy was concerned with the security of supplies should the switch to oil take place. On hearing of D'Arcy's need for capital and in order not to allow the concession to fall into foreign hands, the British Admiralty persuaded the Burmah Oil Company to provide adequate capital for D'Arcy to enable him to continue his exploration.²⁶

After sinking more wells, finally, on 26 May 1908, the exploration company struck oil in large quantities, and so with this discovery the Iranian oil industry was born. Upon striking oil, in 1909, the Anglo-Persian Oil Company (APOC) with capital of 2 million pounds (mostly held by the Burmah Oil Company), was established to take over the oil operations in Iran.²⁷

APOC began its commercial exploitation of Iranian oil soon after its formation,²⁸ but the company needed more capital to expand its operations.²⁹ At the same time, Winston Churchill, who was appointed First Lord of the Admiralty in 1911, was looking for ways to secure a cheap and reliable source of oil for the Royal Navy and APOC's need for capital provided him with such an opportunity. As a result of Churchill's intense lobbying, the British government in 1914, furnished APOC with 2.2 million pounds cash,

raising its capital to 4.2 million pounds, and gave the government a controlling stake in the company.³⁰ This injection of capital by the British government into APOC not only provided it with a major stake in one of the most profitable and largest oil companies in the world, but also gave it an opportunity, despite its pledges to the contrary, to interfere in the internal affairs of Iran.

The British government's shareholding in the Company changed the spirit of the D'arcy Concession and had a profound impact on its standing within the context of international relations.³¹ The Company, however much it proclaimed its independence, was considered to be no longer just a private organisation, but a national enterprise for a national purpose. Most governments, consciously or not, believed that the hidden hand of the British government was to be detected behind most, if not all, of the activities of the company.³² The strongest objections to the British government shareholding in the APOC came from Russia who saw the involvement of the British government as a threat to its own interests in Iran.³³

In order to allay fears over the government's interference in the commercial activities of APOC from within the Company itself, other oil companies and, foreign governments, the British government pledged that neither it nor the two government appointed directors would interfere with the commercial activities or decision making of the Company.³⁴

The first major dispute between Iran and APOC emerged in 1916 over the issue of royalty payments and the damages caused to the company's facilities by local tribes. After four years of negotiations an agreement called the "Armitage-Smith Agreement" was signed in December 1920 between the two parties which in effect limited the net profits attributable to Iran to profits of the producing companies operating in that

country.³⁵ This agreement, however, settled the issue of royalty payments only temporarily, and it was to resurface many times in the years to come.

3.0- The 1921-1941 Period

3.1- The Political Developments

In February 1921, less than three months after the signing of the Interpretive Agreement, Colonel Reza Khan, commander of the only organised standing army which numbered only 3,000 men, staged a military coup in which he took control of Iran. Reza Khan initially became the War Minister and later the Prime Minister. The new government relied for support mainly on conservative social forces and the British government for gaining power and the construction of a strong centralised state.³⁶ During these years, the state took a series of measures to rationalise and expand its central administration. The most important of these measures was the creation of a unified and centralised army which could end the political autonomy of the various regional governors and tribal chiefs, and suppress radical political movements in the north.³⁷ By 1925, the army was the most powerful and centralised institution in the country and Reza Khan, as the commander in chief of this newly created army could extend his authority over almost all the country. By controlling the military, Reza Khan emerged as the most powerful man in the country. The power of military-bureaucratic establishment which upheld the ideology of national interests and modernisation soon overtook the power of the conservative alliance which had initially supported Reza Khan to consolidate his position.

By using the army to manipulate the elections for the Fifth Majlis, Reza Khan managed to install his own supporters in the parliament.³⁸ By 1926 he emerged as Reza

Shah, the founder of the new Pahlavi Dynasty.³⁹

During the latter half of the 1920's, the new regime, with the help of foreign advisors reorganised the finances of the state took measures to regulate the civil service, establish new judicial and educational systems, and introduced new commercial laws.⁴⁰ Rationalisation of the state administration was accompanied by functional and structural differentiation of the state apparatus and the creation of specialised ministerial branches which could play a more direct and active role in the economy. Furthermore, in 1928 the Bank Melli Iran (the National Bank) was established by the state which took over the accounts as well as the monopoly right of banknote issue from the British owned Imperial Bank.⁴¹

3.2- The Economic and Industrial Policies of the Government

The state's economic policy during the 1921-1941 period was not based on a coherent and systematic economic ideology.⁴² The general tendency was towards the creation of a "national economy" by providing the basic politico-legal and infra-structural requirements of a modern economy. With regard to government economic policy two distinct periods, separated by the transitional years of 1929-30, could be distinguished:⁴³

During the 1920s the state adopted mainly a caretaker role in the economy. The free trade regime remained in force up to 1928, which led to the revival of foreign trade. (See Table 4.1.)

However, as Table 4.2 shows, a major change in the pattern of foreign trade during this period took place, in which, after 1920 the share of oil exports exceeded the value of total non-oil exports for the first time. The foreign exchange contributions of the oil sector were in the form of royalties and small domestic expenditures of the APOC.

As the table demonstrates, total foreign exchange contribution of oil was no more than 25% of the total value of oil exports. Moreover, the proceeds from the oil sector during the 1927-1941 period were set aside in a special account which was largely spent on arms purchases.⁴⁴ The role of the state in this period was mainly limited to reforming the political and legal institutions and improving the means of transportation.

By the end of the decade, however, it became clear that the much hoped for commitment of both domestic and foreign capital in Iran's industrial sector was not forthcoming. Iranian merchant capital had received a severe blow due to the recession in foreign trade during the First World War⁴⁵, and foreign capital with the exception of APOC was not available. In fact during the entire inter-war period there was no long-term capital inflow of any kind, neither of portfolio nor direct investment, apart from the above mentioned case. The reason was not lack of interest or lack of encouragement on the side of the Iranian government, but rather the unavailability of long-term capital in the inter-war period.⁴⁶

Despite the above mentioned institutional reforms which took place during the 1920s, by the end of the decade the economic prospects looked even bleaker than the early 1900s. As a matter of fact, between 1913 and the mid-1920s, prior to the Great Depression, there was a steep decline in the terms of trade of Iranian primary exports, while the volume of exports was below pre-war levels.⁴⁷ The Great Depression intensified the above problem and created two new ones for the Iranian government. The first one was the sharp fall in the rate of exchange for the silver based karan (Iran's currency at the time) in the latter half of 1929-30 (Persian calender)⁴⁸ which was due to the depreciation of the value of silver against gold. The other problem which began in the early 1930's was cut in the profits of oil companies including APOC. But the

decline in the royalty payment to the Iranian government was more than proportional to the decline in APOC's net profits or oil production.⁴⁹ It is worth mentioning at this juncture that during the 1911-1932 period, the Iranian government received a total of 12.8 million pounds in royalties, whereas the net profits of the company were 51.5 million pounds and U.K. taxes were 7.7 million pounds for the same period.⁵⁰

The above problems sharply reduced the foreign exchange reserves of the country, and brought foreign trade almost to a standstill. The government was forced to introduce foreign exchange controls and foreign trade monopoly laws in February 1930 and February 1931 respectively.⁵¹

The stagnation in the export sector which was due to slow growth in the world markets meant that the pre-war pattern of export-led growth with its lopsided structure was no longer feasible. This factor with the structural rigidities of the Iranian economy (backward agriculture was a major rigidity) created serious tensions in the economy.⁵² An important aspect of the structural rigidities of the Iranian economy during this period was its dependence on imports for basic manufactured mass consumption goods such as cotton piece goods, kerosene, sugar, and tea which formed more than 80% of merchandise imports (for details of Iran's trade during this period see Chapter Three).

These fundamental economic problems caused a perpetual deficit in the current account of the balance of payments during the 1920's which was escalated by the arrival of the Great Depression. In order to solve these problems, the government, by the mid-1930s, committed itself to a radical restructuring of the economy by the adoption of a state centred policy of economic development and a centrally controlled process of accumulation. Based on this new policy and with the control of foreign trade the government actively pursued a programme of import-substitution industrialisation.⁵³

During the 1930s the government made very effective use of the newly established state machinery for the mobilisation and central control of economic resources. As Table 4.3 shows, the most important source of income for the state during the 1930's was indirect taxation and deficit financing which provided more than 70% of the government's total revenue. More than 40% of total government expenditure during the 1930s/early 1940s was invested, mainly in transportation and industry. About 60% of government investment was in transportation which greatly reduced the cost and time of travel and contributed to the integration of the domestic market.⁵⁴ After transportation, industry received the largest share of government investment. In fact during this period the state was the biggest investor, as by 1941 total investment in the industrial sector had reached 58 million pounds of which 28 million pounds had been invested by the government, and private investment in the industry really got under way in the latter half of the 1930s.⁵⁵ The highly protected home market together with government encouragement in the form of tariff exemption, preferential exchange premium, and exemption of transport fees for imported machinery, had made private manufacturing a highly profitable line of business.⁵⁶ As Table 4.4 shows, by 1940 around 265 industrial plants, employing about 48,000 workers had been established both in the public and private sectors. As the table demonstrates, light manufacturing industries such as textiles and sugar, and heavy industry such as chemicals took the lion's share of investments.

Long term foreign capital was not available during the inter-war period, and the contribution of the oil sector was mainly used for military purchases (up to 47% of the oil revenues) and government current expenditures. These high rates of investment in manufacturing or transportation were actually financed from domestic resources, chiefly indirect taxes and foreign contribution was limited to technical assistance.

The backward agrarian production and relations (absentee landlordism), were however, still impeding the growth of the industrial sector during this period.⁵⁷ Moreover, corruption, and lack of initiative which the highly centralised and bureaucratic regime encouraged, were hampering the development of a planned and coherent industrial policy.⁵⁸

Another important obstacle to the process of economic growth in this period was the inability of the oil industry to establish linkages with other sectors of the Iranian economy. The lack of such linkages was due to the backward state of the Iranian economy which was incapable of producing any goods, or services required by the oil industry. Moreover, inadequacy of oil revenues, corruption, mismanagement and large military expenditures prevented the government from initiating industrial and infrastructural projects.

Table 4.1: Composition of Non-Oil Foreign Trade, 1910-1938 (annual averages)

	1910-13		1919-22 ^c		1927-30 ^c		1938-9	
	Value ^b	%	Value	%	Value	%	Value	%
IMPORTS^a								
Consumption Goods	457.4	93.3	534.1	91.3	620.4	80.0	400.0	52.7
Textiles:	182.8	37.3	219.6	37.6	256.6	33.1	95.0	12.5
Cotton	159.3	32.3	201.6	34.5	206.8	26.6	60.8	8.0
Other	23.5	5.0	18.0	3.1	49.8	6.5	34.2	4.5
Sugar	129.0	26.0	125.9	21.5	101.9	13.1	87.9	11.6
Other	145.6	29.7	188.6	32.2	261.9	33.8	133.4	17.6
Capital Goods	10.1	2.1	20.0	3.3	83.6	10.7	329.3	43.3
Motor vehicle ^d	--	--	--	--	28.6	3.6	124.0	6.1
Machinery & equ.	--	--	--	--	25.2	3.2	80.5	10.6
Metal Products	10.1	2.1	20.3	3.3	29.8	3.9	124.3	16.4
Raw materials	22.8	4.1	30.3	5.3	72.3	9.3	30.0	4.0
Petroleum	8.7	1.7	14.1	2.4	38.0	4.0	18.9	2.5
Yarn	14.1	2.9	16.2	2.9	22.6	2.9	10.0	1.3
Cement	--	--	--	--	11.7	2.4	1.1	0.2
TOTAL	490.3	100.0	584.7	100.0	776.3	100.0	759.3	100.0

MAIN EXPORTS ^f									
Rugs & carpets	51.4	13.4	48.6	30.3	153.3	32.3	72.9	27.2	
Opium	23.5	6.2	20.6	12.6	59.5	12.5	32.1	12.0	
Raw cotton	79.4	21.0	3.3	2.0	46.5	9.8	29.6	11.0	
Rice	35.4	9.3	5.7	3.5	38.2	8.0	2.4	1.0	
Skins & hide	15.9	4.2	5.9	3.6	30.7	6.7	13.8	5.1	
Gum	14.0	3.7	8.5	5.2	16.0	3.4	--	--	
Fruits	55.8	14.4	23.8	14.5	48.3	10.1	68.6	25.5	
Raw wool	11.1	3.0	1.7	1.0	15.0	3.1	12.7	4.7	
Sheep casing	--	--	--	--	11.3	2.4	36.6	13.5	
TOTAL	286.5	100.0	118.1	100.0	418.8	100.0	268.7	100.0	

Notes: (a) - Excludes the oil sector imports.
(b) - Values in million rials.
(c) - Includes some of the imports of AIOC.
(d) - Excludes passenger cars but includes spare parts.
(e) - Mainly kerosene.
(f) - Excludes monetary gold and silver.

Source: Karshenas (1990), pp.72-3.

Table 4.2: Relative Importance of oil in the Iranian Economy (annual averages)

Year	1923-6	28-30	35-7	45-7	55-7	65-7	75-7
Tot qua'ty of oil export (m.t)	3.5	5.0	7.8	16.6	23.2	120.2	303.5
Value of oil exports (fob,m.) a	13.0	23.7	26.6	38.8	43.9 (c)	150.9	1164.0
Govnt oil income (m)a	0.9	1.3	3.8	4.2	20.0	75.0	1133.7
Net forex gains from oil (m)a,b	3.2	3.1	6.8	12.0	25.2	81.3	1164.0
Govnt oil income as a % of oil exports	7.2	5.4	14.4	10.7	45.5	49.7	97.4
Oil income as a % of total govnt revenue	13.8	15.1	16.8	16.4	45.1	50.8	75.4
Forex cont'n of oil sector as % of value of oil exports	25.0	13.3	25.1	31.0	57.4	53.9	100.0
Forex cont'n of oil sector as % of tot exports	21.0	22.5	37.3	53.6	65.0	74.4	83.8

Notes:

a- All the values in the table are in 1923-26 pounds sterling.

b- Royalties plus domestic currency purchases of AIOC.

c- For years 1955-67 export values are calculated on the basis of posted prices.

Source: Karshenas (1990), p.82.

Table 4.3- Sources of Government Revenues, 1928-1938

	1928		1935		1937	
	Value	%	Value	%	Value ^a	%
Indirect Taxes	277	71	693	65	1173	71
State monopolies ^b	64	16	320	30	340	21
State industries	-	-	27	2	74	4
Customs	112	29	170	16	362	22
Other indirect taxes ^c	101	26	176	17	397	24
Direct taxes	50	12	89	8	142	9
Public domains	22	6	27	2	41	2
Oil royalties	28	7	173	16	206	12
Others	15	4	77	7	84	5
Total revenues	392	100	1059	100	1646	100
Total expenditure	392		1238		1916	
Deficit financing	-	-	179	17	270	16.4

Notes:

a- Value in millions of rials.

b- Year 1928 is the tea and sugar monopoly tax earmarked for railway construction.

c- Includes road taxes, post, and telegraph.

Source: same as Table 4.2, p.74.

Table 4.4: Manufacturing Plants established during 1930-1940-a

Sector	Number of plants	Value of capital-b	Installed horsepower	Number of workers
Textiles	72	1168	43026	29601
Sugar	8	582	9909	4501
Drinks	40	75	1360	565
Chemicals	11	637	2901	4458
Soap	16	15	85	231
Glass	6	22	574	1043
Leather	11	65	635	608
Matches	26	50	354	4033
Flour and rice milling	37	89	3072	1376
Cotton ginning	29	53	1382	590
Tea	9	42	348	339
Total	265	2798	63646	47405

Notes:

a- Excludes government cement factories.

b- Historical cost at current prices in millions of rials.

Source: Statistical Survey of Iranian Industries (1947), Ministry of Labour.

3.3- The Iranian Oil industry in the Inter-War Period

This section will first consider the developments within the oil industry itself and then role of the oil sector in the economic development of Iran during the inter-war period will be discussed.

3.3.1- The Developments in the Oil Industry

As mentioned before, with the arrival of the Great Depression in the late

1920s/early 1930s, royalty payments to the Iranian government by APOC were greatly reduced. This situation, however, was not acceptable to Reza Shah who needed increasing amounts of foreign exchange for modernising his army and the expansion of the state machinery throughout the country. In fact, soon after coming to power, he had begun to challenge the legal basis of the Armitage-Smith Agreement of 1920, and disputes over the agreement went on for few years, but the reduction in royalty payments brought the matters to a head.⁵⁹

The sharp decline in royalty payments enticed Reza Shah to cancel the D'Arcy Concession on 26 November 1932.⁶⁰ The British government did not recognise the Persian government's right to annul the concession unilaterally and brought the matter before the Council of the League of Nations. Before the Council could announce its decision, however, a compromise was reached between the two parties in which the calculation of royalties was to be made on an entirely new basis.⁶¹

Under the new agreement which was signed in 1933, the royalty payments were linked to the volume of oil production. APOC agreed to pay the Persian government the sum of 4 gold shillings per ton of oil produced. The company also agreed to pay as taxes the sum of 9 pence (gold) per ton for the first six million tons of oil produced in any one year for the first 15 years, and 6 pence per ton for the production of oil in excess of six million tons for the same period. After 15 years these sums were to rise to one gold shilling and 9 pence respectively. APOC also agreed to pay Persia 20% of the distribution of its earnings in excess of 671,250 pounds. Moreover, the area under exploration was to be reduced to 100,000 square miles, and the period of the concession was increased to 60 years (i.e until 1993).⁶²

The new agreement also required APOC to develop the Naft-e-Shah oilfield in

western Iran on the Iraqi border, and to process its output for Iran's domestic consumption in a new refinery to be built in Kermanshah. Furthermore, APOC agreed to make every effort to increase its Iranian staff, and place some Iranian nationals in technical and commercial positions.⁶³ The new concession also provided for Iran to receive cheaper oil products by offering 10% and 25% discounts for private and government use respectively. Finally, the Persian government agreed not to annul or alter the concession "either by general or special legislation in the future, or by administrative measures, or any other act of the executive authorities".⁶⁴

As Table 4.5 shows, in terms of profitability per ton of oil produced during the period in which the 1933 Agreement was in force, the Iranian government was slightly better off than before.

Finally, in 1935, the company in accordance with the Iranian law, changed its name to the Anglo-Iranian Oil Company (AIOC).

Table 4.5: Revenues of the Iranian Government and AIOC Profits for Selected Years (in pounds sterling)

Year	Iranian Government Revenues Per Ton	AIOC Profits Per ton
1913-14	0.04	0.10
1919-20	0.34	1.34
1925-26	0.23	0.96
1930	0.22	0.64
1931	0.05	0.42
1933	0.26	0.37
1935	0.30	0.47
1940	0.47	0.33
1945	0.33	0.34
1946	0.37	0.50
1950	0.50	1.06

Source: F. Fesharaki, "The Development of the Iranian Oil industry 1901-71", Ph.D. Dissertation, Surrey University, 1974, chapter 3.

3.3.2- The Role of the Oil Sector in the Economic Development Of Iran in the Inter-War Period

The role of any pivotal or leading industry or dynamic economic activity in the development of an economy can be examined from two standpoints: First, there is the principal or *direct* value added by the activity itself to the magnitude of the gross domestic product (direct affects). Second, there are the *indirect* or ancillary contributions through additional productive endeavours stimulated by the production, consumption, and fiscal linkages that the leading sector may establish with other sectors of the economy.⁶⁵

Direct linkages dealing with output stimulation, are split into *backward* and

forward links. Backward linkages refer to the stimulus given to upstream or supplying activities: for example, demand for human resources, materials, goods, services, and capital from other sectors of the economy. Forward linkages refer to the potential of stimulating downstream operations like the use of the industry's output and end-products as inputs of other industries and activities.

Fiscal effect (or linkage) is the most important indirect effect (in case of export-oriented mineral extractions like oil), and relates to the manner in which the government (i) appropriates the surplus of the leading sector through ownership or taxation, and (ii) allocates the proceeds through (a) the expansion of the public services, (b) new public investments at home or abroad, or (c) negative indirect taxes and subsidies.⁶⁶

The Iranian oil industry has been the leading sector of the domestic economy for most of the 20th Century, and accordingly, the following two sub-sections, will analyze the industry's direct and indirect influences on the national economy in the inter-war period.

3.3.2.1- Direct Effects

The direct impact of the oil industry on the Iranian economy in the inter-war period can be considered through forward and backward linkages that the industry established with other sectors of the domestic economy. This will provide an insight into the degree of integration of this leading sector with the national economy and the extent to which the oil sector stimulated growth in other sectors.

Backward linkages, or flow of resources from the national economy to the oil sector can be divided into: (a) Participation of Iranian capital markets or individuals in providing equity capital for the industry; (b) Providing employment for Iranians in the

industry at all levels including technical and managerial jobs.

(c) Purchase of domestic industries' products and other domestically produced goods for input into the industry and consumption by its employees. This in turn can be subdivided into demand for fixed assets required for the expansion of the industry, and demand for current resources to meet the routine requirements of the industry.

AIOC (or APOC) had decided from the beginning to remain exclusively in British hands. The company did not offer any shares on the domestic market (it should be noted, however, that in the inter-war period capital markets in Iran had not yet developed, and no stock exchange existed). Nevertheless, the Iranian government's attempts to purchase a few shares out of a new issue of 130,000 in 1920 were blocked by the British government.⁶⁷

As far as employment opportunities were concerned, AIOC's activities had a major impact on the unskilled workforce in southwestern Iran. The employment of many tribesmen by the Company caused them to change their nomadic life-style to a settled and industrial one.⁶⁸ However, with regard to senior or managerial jobs, opportunities were very small. This was mainly due to the fact that in the inter-war period the literacy rate was very low in Iran and the domestic economy was primarily based on very backward agrarian relations. As a result, skills levels in Iran were very low and there were very few Iranians, especially in southwest of the country with skills useful for industrial occupations. As a result, the majority of Iranians employed by APOC occupied unskilled positions within the Company. As Table 4.6 shows between 1919 and 1932 the majority of APOC's workforce was composed of Iranians, mainly in unskilled jobs.

The situation, however, began to change after the conclusion of new concession in 1933. Under the new agreement the APOC initiated various vocational courses and

apprenticeship schemes for its Iranian employees in order to upgrade their skills and prepare them for higher positions within the Company. Furthermore, in 1939 Anglo Iranian Oil Company (AIOC)⁶⁹ established the Abadan Technical Institute for training Iranians in various technical and commercial courses and sent Iranians on a regular basis to Britain for higher education.⁷⁰

It was hoped that these programmes would reduce the proportion of non-Iranians holding skilled jobs from 17.5% in 1936 to 13.5% in 1939.⁷¹ As a result of these initiatives the number of Iranians holding skilled and managerial jobs increased rapidly in the latter part of 1930s and early 1940s. Nevertheless, because of the start of the Second World War and the enforced curtailment of AIOC's investment plans and lack of trained staff and equipment due to wartime shortages, the Company did not manage to increase its number of skilled Iranian employees as demanded by the Iranians. This real or perceived discrimination against Iranians became a major source of resentment in Iran against the Company and was a major factor in Iranian demands for the nationalisation of AIOC assets in Iran in the latter part of the 1940s.

According to a study by ILO, in 1949 less than 1% of the Iranian workforce was employed by the AIOC. Only 9% of these employees were among salaried staff, and the rest were wage earners or unskilled workers.⁷² Among the salaried employees, the number of "graded" (high ranking) Iranians was about one-third of the British staff. On the other hand, the ratio of "non-graded" employees was five Iranians to one foreigner, most of them Indians. According to this study, There were no Iranians assigned to top managerial positions within the company.⁷³ Table 4.7 presents data on the employment level within the Iranian oil industry between 1939 and 1951. As the table shows, total employment in the industry was 17,783, of which just over 15,000 were Iranians and the

rest foreigners (as AIOC was the only oil company operating in Iran, these figures can be taken as the number of AIOC's employees). Total employment in the oil industry was reduced to 13,065 in 1941, as nearly 3,000 Iranians lost their jobs which was equal to almost all of the industry's reduction in labour force that year.

As discussed above, the purchases of domestically produced goods can be divided into demand for fixed assets and demand for products which enable the sector to carry out its routine operations. Demand for fixed assets include demand for machinery and plant, construction materials, buildings, land, etc, needed for the establishment and/or expansion of the industry, as well as contracts with engineering and construction companies for the building of plants buildings and so on.

As the Iranian economy was underdeveloped in the period under study, and oil is a very capital intensive industry it (the economy) was unable to provide the industry with plant and machinery required for the industry's operations. Moreover, no contracting companies existed in Iran at the time which were capable of building oil installations for AIOC.⁷⁴ However, according to two Iranian observers,⁷⁵ AIOC was not prepared to purchase those goods which were being produced in Iran. These goods included cement, other building materials, food and drinks, which despite being competitive both in terms of price and quality with comparable foreign goods and in spite of Iranian demands, the company imported in huge quantities from abroad. In their opinion AIOC was abusing the customs privileges that it had been granted in the oil concessions agreements. Therefore, as far as the purchase of locally produced goods were concerned, AIOC offered no stimulus to the Iranian economy.⁷⁶ Whatever the causes, as Ferrier writes: "There was little local linkage" with the rest of the Iranian economy as there were few "local contractors" available.

Forward linkages include the use of the leading industry's outputs as inputs in other domestic industries, or the participation of that industry in the latter through investment in by-product ventures. In the case of oil industry, these could include the use of oil and oil products by various sections of the domestic industry as a source of energy, or as raw materials, or participation by the oil industry with the local industry through investment in by-product ventures linked to oil production and refining and petrochemicals, as well as diversification into non-oil activities, or the sale of oil products.

The evidence suggests that AIOC, during the period under study, was not involved in any local venture in Iran, apart from its own operations. The company's annual reports show that such matters were never seriously considered by the management. The only significant forward linkage was the consumption of oil products in Iran during this period.⁷⁷ It is interesting to note that oil products consumed by the Iranians during the period under study were not all supplied by AIOC. In fact, there were three major sources of supply, the AIOC's own sales of its domestically produced and refined products, AIOC's imports from abroad, and imports from Russia.⁷⁸ As Table 4.8 shows, until late the 1920s, more than three-quarters of the oil consumption was imported, and until 1937, Soviet Union exports accounted for the bulk of oil consumption in Iran. But as the table demonstrates, imports fell sharply in the late 1930s and 1940s. The main reason for imports of such large quantities of petroleum products by Iran, at a time when she was the biggest oil producer in the Middle East and Abadan Refinery was the largest of its kind in the world, was the fact that the oil production region and Abadan Refinery were located in the southwest, while the main centres of consumption were in the northern and central parts of Iran, with distances of at least 1,000 kms between them.

Lack of adequate transportation in Iran in the 1920s and early 1930s exacerbated the problem. As the main petroleum consuming regions were nearer to Russia and transportation was relatively better in those parts, it made it easier for the former to dominate the Iranian oil market for a while. Moreover, as the domestic oil market was small (see Table 4.8), AIOC was not willing to invest in domestic transport facilities. With the improvements in the Iranian transport system in the latter half of the 1930s, however, AIOC rapidly expanded its operation in Iran, and by the early 1940s became almost the sole supplier of oil products in the country.

Considering the above discussion, it becomes clear that the direct effects of the oil industry on the Iranian economy during the 1921-1941 period were meagre. There were practically no forward (with the exception of a small consumption of oil products) or backward linkages with the rest of the Iranian economy, as AIOC did not buy domestically produced goods, or invest in local industry. The fact that AIOC was a net purchaser of rials from the Iranian government shows that domestic sales of petroleum products were not large enough to meet the company's local currency expenditures (see Table 4.2).

Table 4.6: APOC staff and Labour in Iran 1919-32

Year	Persians	Indians	Others	European	Total
1919	3,979	2,641	47	117	6,784
1920	8,447	3,616	35	244	12,342
1921	9,009	4,709	51	271	14,040
1922	18,441	4,285	2,940	490	26,156
1923	20,762	4,715	849	644	26,970
1924	18,384	4,731	648	738	24,501
1925	15,820	4,890	7,201	994	28,905
1926	15,843	3,588	6,042	1,020	26,493
1927	17,887	3,272	7,009	1,055	29,223
1928	16,382	3,050	5,365	1,000	25,797
1929	15,245	2,158	5,273	980	24,016
1930	20,095	2,411	7,549	1,191	31,246
1931	14,797	1,675	3,178	989	20,639
1932	10,343	1,420	2,346	744	14,853

Source: BP reports to Imperial Commissioner and BP 78/63/1-205. Printed in Ferrier (1982), p.401.

Table 4.7: Employment in the Iranian Oil Industry, 1939-51

Year	Iranians	Non-Iranians	Not Specified	Total
1939	15,060	2,723	n.a.	17,783
1940	13,380	2,273	n.a.	15,653
1941	10,980	2,079	n.a.	13,065
1942	11,654	1,803	n.a.	13,457
1943	16,389	2,864	n.a.	19,253
1944	16,485	3,380	n.a.	19,865
1945	21,781	4,030	12,143	37,954
1946	24,899	4,520	12,461	41,870
1947	28,221	4,228	11,065	43,514
1948	29,917	4,306	12,189	46,412
1949	32,011	4,477	16,410	52,898
1950	31,875	4,500	n.a.	n.a.
1951	50,662	4,271	12,951	67,884

Note: The figures for 1939-44, are incomplete due to lack of information on contract labour, and hence, the total figures for this period are smaller than the actual ones.

Source: L. Nahai and C. Kimble, "The Petroleum Industry of Iran", U.S. Department of Interior, Bureau of Mines, 1963, p.20.

Table 4.8: Production, Exports, Consumption, and Imports for Selected Years (metric tons)

Year	Production	Imports	Total Consumption	Exports	Imports as % of Consumption
1912	82.0	38.4	38.4	37.0	100
1917	911.8	45.2	48.1	623.0	94
1922	3,006.5	23.4	27.4	2,604.0	72
1927	5,443.7	40.0	52.5	4,754.4	77
1932	6,449.2	56.5	40.0	6,006.3	--
1937	10,329.8	44.5	162.3	9,302.0	28
1942	9,546.7	6.7	265.2	8,030.2	2
1947	20,518.9	34.6	595.2	17,725.1	6
1951	16,885.7	6.4	941.0	14,032.3	0.7

Note: In 1932 imports are larger than consumption implying some re-exports to neighbouring countries.

Source: Fesharaki (1976), p.35.

3.3.2.2- Indirect Effects

In section 3.3.2, a brief definition of the term "indirect" or fiscal effects of oil revenues on the economy of a producing country was presented. Basically, the effects of these revenues is to increase the current spending power (ordinary budget) of the state, to provide the principal financing for development programmes and (along with the local expenditure of concessionaire companies brought into the country in the form of foreign exchange) to finance imports and other debit items in the balance of payments.⁷⁹

However, one important point which needs to be cleared here is that oil revenues are chiefly denominated in foreign currency, and as such are different from other sources of

state revenue, say indirect taxes on locally produced goods.⁸⁰ The former enables the government to buy any tradeable goods available on the international market, while the latter can only be spent on locally produced goods and services. This distinction is important as oil revenues enable the producing countries (or any other raw materials producer for that matter) which are generally underdeveloped with no other export industries, to purchase goods and services for current consumption or development purposes, an option which would not have been available to them had the oil reserves not existed. The point being made here is that the availability of oil revenues in the form of hard currencies, removes one of the main rigidities (i.e. shortage of foreign currency) facing the developing countries, and enables the producing nations to carry out their development programmes at a much higher rate. However, as shall be shown shortly, this option was not available to Iran in the inter-war period.

To understand the significance of oil revenues, they can be examined in three different contexts. First, they can be compared with the total revenues of the Iranian government during a certain period, or second, the foreign exchange contribution of oil revenues can be shown as a percentage of total exports. Thirdly, they could be contrasted with the total value of oil exports during the same period.

During the Qajar regime, oil revenues received by the Iranian government were mainly used to pay for the private expenses of the court. When Reza Shah took power in Iran, these revenues were incorporated in to the general budget.⁸¹ (Data on government budget is only available from 1923. See Table 4.2.)

As Table 4.2 shows, during the 1923-26 period, the total value of oil exports was 13 million pounds, of which the Iranian government received 0.9 million pounds, or 7% of the value of oil exports. The net foreign exchange proceeds from the oil sector for the

same period was 3.2 million pounds (which included domestic currency purchases of AIOC), and represented 21% of total foreign exchange receipts by Iran. This 3.2 million pounds provided the government with 13.8% of its total revenue for the same period. In the 1935-37 period, AIOC exported 26.6 million pounds worth of oil of which it paid the Iranian government 3.8 million pounds in royalties that represented 16.8% of the latter's total income. At the same time, net foreign exchange proceeds from the oil sector amounted to 6.8 million pounds which was 37.3% of total foreign currencies obtained by Iran.

As can be observed from the above analysis, the contribution of oil exports to the Iranian government budgets was small compared to its revenue from other sources.

Now, the impact of oil revenues on the economic development of Iran during the inter-war period will be discussed. One problem with evaluating such impact is that until 1949 Iran operated only one annual budget, which included both current and development expenditures.⁸² Since no separate development budget was prepared, it is difficult to accurately measure the contribution of the oil revenues to the development expenditure. Fragmentary budget data shows that up to 1927, all receipts from the oil sector were included in the consolidated budget. From 1927 to 1942, however, some 94% of oil revenues were set aside in a special reserve account for non-routine expenditure.⁸³ Some 47% of income in this account was used to purchase military hardware, and the rest was used for the construction of the Trans-Iranian Railways and the establishment of some industries.⁸⁴ From the available data, one can estimate that in the 1930s development expenditure accounted for 30 to 40% of the annual public budget.⁸⁵

Considering the arguments and data in the present section, it becomes clear that,

the combined effects (direct and indirect) of the oil industry were too inconsequential to influence the pace or direction of Iran's economic development in the inter-war period.

4.0- The 1941-1953 Period

4.1- The Oil Nationalisation Dispute

With the outbreak of the Second World War and the start of the Russo-German War, the Allied Powers decided to open a new line to supply the beleaguered Russian forces, and Iran was the best route. Meanwhile, Reza Shah who was being accused by the Allies of sympathising with the Germans, had lost favour with the British. So instead of relying on him, after a short war in August 1941, the British and Americans occupied southern Iran, and the Russians invaded the north of the country. Reza Shah was forced to abdicate and left the country, and his son Mohammad Reza became the new king (the Shah until 1979). The occupation, which lasted until 1946, greatly disrupted the fragile economy of Iran and brought high inflation, and immense poverty and hardship for the people.

With the fall of Reza Shah, the 16-year period of his authoritarian regime came to an end. The disorganised paralysis of the state apparatus resulting from the occupation and absence of a "strong man" brought about a period of relative openness and a re-entry of the masses into Iranian politics in the post-war era.⁸⁶ The people saw the occupying forces as perpetuating and strengthening the political domination of the British government and AIOC over Iran, and, with the departure of these forces, AIOC became the focus of opposition.

The fact that AIOC's profits had risen tenfold compared to a fourfold increase

in Iranian royalties in the 1940-1950 period highlighted the alleged exploitative nature of the oil agreement and led to the Majlis's (the parliament) demands for a revision of the structure of the concession. The nationalistic sentiments of the people forced the government to introduce a bill in October 1947 which proposed a ban on the award of any new oil concession by the government without prior approval by the Majlis and, furthermore, instructed the government to investigate and renegotiate the terms of the AIOC concession.⁸⁷

Around the same time, the principal of 50-50 profit sharing was accepted by Venezuela. Following these developments, AIOC in 1948 submitted its "Supplemental Agreement" to the Iranian government in which a rise in royalties from four to six shillings (gold) plus an increase in tax of 9 pence to 1 shilling was proposed. Moreover, the agreement stipulated that sums equal to 20% of those placed to the Company's general reserve should thereafter be paid annually to Iran and an immediate payment exceeding 5 Million pounds being made in respect of allotment to general reserves since 1947. The agreement also stipulated that AIOC's annual payments covering Iran's share of divisible profits and allocations to reserves should never fall below 4 million pounds and that oil products prices for Iran's domestic consumption should further be reduced. It was also agreed that the arrangement made under the 1933 Agreement to compensate Iran for fluctuations in the gold sterling exchange rates should remain operative.⁸⁸ The Chairman of AIOC stated that this agreement would give Iran the same benefits as a 50-50 agreement.⁸⁹ The agreement was, however, rejected by the oil committee of the Majlis, headed by Dr Mohammad Mossadegh as being unacceptable.⁹⁰ Around the same time (1949), the Arabian American Oil Company (ARAMCO) concluded a 50-50 profit sharing agreement with Saudi Arabia.⁹¹ AIOC offered to conclude an agreement

with Iran on the same line as that between Saudi Arabia and ARAMCO but Iran rejected this proposal as well.⁹²

Following these events, in February 1951, Dr Mossadegh submitted a draft legislation to the Majlis for the nationalisation of the oil industry and all of AIOC's properties in Iran. The Iranian government was opposed to the nationalisation and four days after the introduction of the bill, the Prime Minister, General Razmara, was assassinated, and on 28 April 1951, Dr Mossadegh was elected as the new Premier. On the 30th of that month the Majlis approved Mossadegh's proposal to nationalise AIOC's properties.⁹³

The British government took the matter before the International Court of Justice in the Hague, but the Court ruled in July 1952 that it had no jurisdiction over Iran.⁹⁴ AIOC however, succeeded in persuading other international oil companies to boycott Iranian oil which was now being produced by the newly established National Iranian Oil Company (NIOC). Furthermore, AIOC threatened legal action against any company or country which bought "stolen" Iranian oil. These AIOC tactics were very successful in denying Iran the opportunity to sell her oil in the international markets. Iran managed to sell only two small quantities of oil to the Japanese and Italians (see Chapter Three). The oil boycott was preventing Iran from earning enough foreign exchange to pay for much needed imports, which in turn caused a deepening economic crisis and chaos in the country.⁹⁵

The Americans who initially supported Iran became concerned over the effects that the Iranian nationalisation may have on their own oil interests in the Middle East or, indeed around the world. Particularly, the large American oil companies on whose support Dr Mossadegh was counting refused to handle the Iranian oil, as they believed

that a successful oil nationalisation there may endanger their own interests in the region. With the election of the pro-big business former General Eisenhower as the U.S. President in 1952, the Americans turned decidedly against the Iranians.

Winston Churchill, who had once again become the British Prime Minister, (note that it was him who in the first place persuaded the British government to buy a controlling stake in APOC back in 1914) adopted a much tougher attitude against Iran, and moreover, managed to convince his war-time ally, President Eisenhower, that the Iranian nationalisation was not in American, as well as British interests. Furthermore, he argued that with the ensuing Cold War, the Russians may take advantage of the turmoil in Iran and invade the country.

These arguments succeeded in winning over President Eisenhower, and he agreed to help the British to reverse the oil nationalisation in Iran. So the Americans, with the help of the British, and more crucially with the support of Iranian conservative classes: landowners, merchant bourgeoisie, high clergy, and some sections of the armed forces, arranged for a coup in August 1953 to remove Dr Mossadegh from premiership, and install someone who was sympathetic to Western interests in Iran.

The coup succeeded in toppling the Mossadegh government and installed General Zahedi as the new Prime Minister. The Shah returned to power and a new phase of ruthless suppression of all democratic forces began. Although the new government did not dare nullify the nationalisation law for fear of the people's adverse reaction, it nevertheless concluded a new agreement in August 1954 with a consortium of major oil companies which in effect destroyed the process of nationalisation.⁹⁶

4.1.1- The 1954 Consortium Agreement

Although the Consortium Agreement recognised the nationalisation of the Iranian oil industry, it clearly specified that Iran had no right to interfere in the running of the concession. The area covered by the agreement was about the same size as the area in AIOC's concession of about 100,000 square miles. Kermanshah oilfield together with the Kermanshah Refinery were taken over by NIOC, and the company was given the ownership of all producing, refining, auxiliary installations operated by AIOC and the future facilities of the Consortium members.⁹⁷

Under the agreement, NIOC was to take over the "non-basic operations" which included health, housing, and education. (In fact NIOC did not take over these functions until 1959, and then only partially with financial contribution from the Consortium.) The agreement was to run for 25 years with the provision of three 5-year renewals at the Consortium option.⁹⁸

Payments to the Iranian government took the form of royalty payments and 50-50 net profit division. Royalties were fixed at 12.5% of total production. The 50-50 profit-sharing arrangement meant that the net profits of the producing stage should be divided equally between the Consortium and NIOC.⁹⁹

The 50-50 profit sharing device meant that Iran's oil revenues more than tripled from 1950 to 1956 despite a decrease in average daily production from 660,000 to 540,000 barrels.¹⁰⁰ However, the agreement between Iran and the Consortium was in essence no different from those concluded earlier between other oil producing countries and major oil companies.¹⁰¹

According to Stocking the Consortium Agreement gave Iranians "the shadow of what they sought while retaining for the British the substance of what they had".¹⁰²

Moreover, the nationalisation dispute, apart from tripling Iran's oil revenues caused long-term damage to the Iranian economy and particularly its oil industry, resulting in Iran losing her dominant position in the Middle East.¹⁰³

5.0- The 1954-1973 Period

5.1- Political Developments

With the military coup of 1953 the period of open politics in post-war Iran came to an end, and the second stage of modern authoritarianism in which the Shah assumed an increasingly larger role in the affairs of the state began. The conclusion of the Consortium Agreement in 1954, initiated the third phase of economic development and industrialisation with oil becoming the predominant source of financing.

However, while in the second phase, the main role of the state was the mobilisation of resources in an agrarian economy (through the collection of indirect taxes). In the third phase, there was a reversal of roles, in which the state accepted responsibility for the distribution and allocation of the already centralised economic resources in the form of oil revenues. This period can be broken down into two sub-periods: divided by the crisis years of 1960-1963.

5.1.1- The 1954-1960 Period

During these years, the Shah relied on the support of a conservative coalition of bazaar bourgeoisie, landowners, and high clergy to strengthen his position and destroy the democratic and radical opposition movements. During this time, the Shah, with massive help from the Americans, rebuilt and unified the military-bureaucratic state apparatus under his own control. Once this task was over, he became increasingly

independent of the conservative coalition which , anyway, did not last long.

The rapid inflow of oil revenues after the 1954 oil agreement created a boom in imports and economic activity for a short time. By 1959-1960, strong inflationary pressures were building up which, together with the depletion of foreign reserves, forced the government to adopt economic austerity measures.¹⁰⁴ The severe economic situation created strong internal and external pressures for social reforms and change of the government economic strategy.¹⁰⁵

In responding to these pressures, the Shah, in February 1963, announced a six point reform programme which he called the "the White Revolution". The most important part of this programme was the land reform which sought to eliminate absentee landowners, an important element of the coalition which had supported the Shah and his regime since early 1950 (or more precisely since the establishment of the Pahlavi Dynasty in 1926).¹⁰⁶

The coalition did not accept this historical break without a fight. Together with other sections of society it organised wide-spread opposition to the Shah's rule which culminated in the violent confrontation of June 1963. The brutal suppression of the June demonstration also ended the political compromise with the bazaar bourgeoisie (which had benefitted immensely from the regime's liberal trade policies in the 1950's), and the clergy.¹⁰⁷

5.1.2- 1963-1973 Period

The quelling of the opposition and the break with the traditional coalition marked the beginning of the second period of the post-1953 authoritarian rule and accelerated the process of bureaucratization and centralisation of power which had been taking place

since 1953. Specifically, the economic bureaucratic controls were greatly expanded and the state, in order to redirect capital into industrial activities, abandoned its semi-liberal economic policy and adopted an active interventionist strategy.¹⁰⁸

The new government economic strategy took the form of the creation of new organisations, the expansion of existing ones like specialised banks, the Plan Organisation to provide long-term subsidised loans to private industry, the implementation of diverse investment programmes both in industry (public and private) and the country's infrastructure, and the introduction of high tariffs and trade barriers against competing foreign goods.¹⁰⁹ Two of the most important economic institutions in this period were the Plan Organisation (In the early 1970s it also assumed responsibility for the general budget and was renamed the Plan and Budget Organisation) and the Industrial and Mining Development Bank of Iran (IMDBI). (This chapter is only concerned with the activities of the PO, as this organisation was (is) responsible for the drawing up and implementation of development plans.)¹¹⁰

5.2- The Role of Oil in the Economic Development of Iran after the 1954 Consortium Agreement

5.2.1- Indirect Effects¹¹¹

After the Consortium Agreement of 1954, Iran's oil income increased from \$34.4 million in 1954-55 to \$5,066.6 million in 1973-74, an increase of nearly 150 times.¹¹² However, this oil income was not large enough to cover the government's spiralling current and development expenditure and it had to resort to large scale foreign borrowing and grants to make up for the shortfall. It is important to note that Iran's ability to borrow in international markets was dependent on her ability to repay these loans from her oil revenues which was like mortgaging her future oil income. Therefore,

the effect of oil revenues on the government's expenditure were well above the actual receipts from the oil sector for any given year. In fact, the oil sector, in complete contrast to the inter-war period, played a pivotal role in the economic development of Iran. Table 4.9 illustrates the importance of foreign exchange receipts from the oil sector to the four development plans, especially the Third and Fourth ones, and to the foreign exchange reserves of the country. Furthermore, Table 4.10 manifests the degree of the country's dependence in the post-war period on the oil sector for development expenditure. As the table shows, from the Third Development Plan onwards, at least 60% of the oil revenues were allocated to the Plan Organisation for development purposes.

Table 4.9: Iran's Foreign Exchange Receipts (Millions of Dollars), 1949-73

PLAN	OIL SECTOR		NON-OIL		FOREIGN		TOTAL
	Reve- nues	Purch- ases	Goods	Servi- ces	Loans	Grants	
PLAN							
First	176	182	416	45	79	99	997
Second	1670	481	640	342	651	160	3944
Third	2958	716	700	425	677	--	5476
Fourth	7506	620	1423	1150	5184	--	15883
Total	12310	1999	3179	1962	6591	259	26300

Source: J. Amuzegar (1991), p.45.

Table 4.10: Division of Oil Revenues Between the Treasury General and the Plan Organisation, 1963-73 in billions of rials.

YEAR	OIL REVENUES	SHARE OF TREASURY GENERAL		SHARE OF PLAN ORGANISATION	
	Amount	Amount	% of Tot	Amount	% of Tot
1963-64	27.7	11.4	41.2	16.3	58.8
1964-65	36.4	14.1	38.7	22.3	61.3
1965-66	50.0a	12.4	24.8	37.6	75.2
1966-67	47.4	13.3	28.1	34.1	71.9
1967-68	54.0	14.5	26.8	39.5	73.2
1968-69	61.8	15.0c	24.3	46.8d	75.7
1969-70	70.0b	14.7	21.0	55.4	79.0
1970-71	83.8	17.6	21.0	66.2	79.0
1971-72	150.3a	34.0	22.6	116.3	77.4
1972-73	178.2	36.6	20.5	141.6	79.5
1973-74	311.2	91.2	29.0	220.0e	71.0

Notes:

- a- Includes oil bonuses of 10.5 billion rials and 3.5 billions rials in 1961 and 1971.
- b- Excludes 6.3 billion rials advance payment by the Consortium.
- c- Includes 2 billion rials transfer from the PO oil revenues for the implementation of the new civil code.
- d- Excludes 2 billion rials mentioned in (c).
- e- Estimated.

Source: Fesharaki (1976), p.135.

5.2.1.1- Development Planning in Iran

Development planning started in Iran in 1949 after the parliament passed the Plan Organisation Act, establishing a machinery for planning and implementing development projects in Iran.¹¹³ From 1949 to March 1973, four development plans were executed in Iran¹¹⁴ (See Table 4.11 for data on revenues and expenditures of the four plans.).

The Fifth Development plan which was started in March 1973 was extensively revised in 1974 as a result of the huge increases in Iran oil revenues and became known as the revised Fifth Plan.

In the First Seven Year Development Plan (1949-1955) some infra-structural projects were started and half a dozen new industrial plants were established. This plan, however, only managed to implement around 20% of its intended projects as it was disrupted by the oil nationalisation dispute of 1951-53 which stopped the flow of oil revenues to the Plan Organisation.¹¹⁵

The Second Seven Year Plan (1956-62) was drafted soon after the oil agreement between the Iranian government and the Consortium, and as Table 4.11 shows over 73% of its revenues were to come from oil sales and the rest was to be mainly financed by foreign borrowing. The Second Plan mostly followed the First and tried to complete activities already started. This plan nevertheless coincided with the economic recession in the early 1960s and a severe drought affecting agriculture which greatly restricted its implementation.¹¹⁶ During the Second Plan, about 8% of the total outlay was spent on development of the domestic industry (mainly textile mills, sugar refineries, and cement plants). Overall, total development expenditure of the plan was 84%, with the balance going to social services and repayment of foreign loans (see Table 4.11).

The first two plans, apart from being interrupted by external events were marred by lack of statistical information, little prior experience with economic planning, the multitude of urgent needs, rivalry between various government departments, and political pressure by vested interests. The period covered by these two plans are referred to as "pre-take-off" period.¹¹⁷

The Third Development Plan (1963-67) projected a total public expenditure of

IR232 billion (\$3.06 billion)¹¹⁸, 66% of which was to be financed by oil revenues. The rest of the expenditure was to be financed by foreign borrowing and domestic sources. The Plan Organisation's share of the oil revenues (rising each year with the increase in oil receipts) averaged around 70% during the Third Plan (see Table 4.10). Moreover, the Plan forecast private investment of about IR150 billion (\$2 billion) which, together with public investment, was to produce 6% annual real growth of the economy.¹¹⁹

The significance of oil revenues in the implementation of the Third Plan can be readily seen from Tables 4.9 to 4.11, and these ever increasing revenues helped the Plan to finish its term with most of its components exceeding their growth rates. The average annual growth rate of GNP rose to 8.8% and per capita GNP increased 6.5% a year, while inflation was kept at a low rate of 1.4%. The oil sector had the highest rate of growth of 13.2% a year, followed by industry and construction (13%).¹²⁰

Public investment in the Third Plan took a marked shift away from light industry and towards the establishment and expansion of heavy industry as the state financed the construction of a steel mill, several machine tool plants, a tractor assembly, an aluminium smelting plant, and three petrochemical plants. The reason for the government's massive investment in capital intensive-heavy industry was that it was well beyond the private sector's capacity to do so. The latter, sometimes with the participation of foreign capital, concentrated chiefly on light industry like footwear, foodstuffs, plastic ware, textiles, construction materials, home appliances, radio and television receivers and so on. The private sector, however, did make some inroads into heavy industry by investing in vehicle assembly, engineering materials, and small scale chemical and petrochemical plants.¹²¹

The capital intensive nature of public investments, however, hindered the Plan's

target of creating one million new jobs during its life time and in fact, with the net addition of about 1.8 million to the labour force, the urban unemployment problem was gravely aggravated. Furthermore, with the agricultural sector achieving only a 3.4% growth rate (compared to the projected 4.1%)¹²² food shortages became a major problem which forced the government to use oil revenues to import massive amounts of food from abroad.

The Fourth Development Plan (1968-72) was to be financed by \$7 billion projected foreign exchange receipts from oil, gas, and petrochemical exports, and was initially projected to increase real GNP by 9.3% per year and to create one million new jobs. In effect, the Plan managed to spend IR610 billion of which IR385 billions or 63% came from the oil sector (see Table 4.11).

The Fourth Plan's total outlay was 2.6 times that of the Third Plan, thanks to huge increases in oil production, exports and prices. Revenues from the oil sector rose from nearly \$3000 million in the Third Plan to over \$7500 million in the Fourth, of which up to 79% was allocated to the Plan Organisation (see Tables 4.9 and 4.10).

Investment in industry and mining rose from 17.1 billion rial in the Third to 113.1 billion rial in the Fourth Plan, growing from 7% to 19% of the total disbursements respectively (Table 4.11). This demonstrates the government's determination to push ahead with the industrialisation process which now had been facilitated by improvements in the country's infra-structure during the previous plans. More precisely, over 22% of the Plan's outlay was spent on continued investments in iron and steel, petrochemicals, machine tools, and metallurgical plants.¹²³

Due to such factors as more sophisticated planning, better intra-governmental relations, relative socio-political stability, and higher oil revenues, the Fourth Plan was

a success. Real GNP grew by 11.6% a year, and the employment target of 1 million new jobs was exceeded by a quarter of a million workers.¹²⁴

Against this background, however, an almost exclusive reliance on oil whose production capacity was reaching its peak, began to worry the government over the economic prospects of the country in the long-term. This was in fact one of the main reasons behind the state's wish for rapid industrialisation of Iran, especially the development of the petrochemical industry, export refineries, and gas exports to gain added value from the fast depleting oil reserves.

The 1962-73 period, covered by the Third and Fourth Development Plans is referred to as the "take-off" or "steady growth" period, and represented the high point of Iran's post-war economic development. The country's annual growth in real terms was 8.8% for 1962-68, and an extraordinarily high rate of 11.6% for 1968-72 which matched that of Japan during her high growth period. This growth which is termed as "perverse growth";¹²⁵ i.e. a process of growth which is not viable in the long-run and is subject to sharp cyclical fluctuations in the medium-run, however, created a few economic problems (especially shortage of foreign currency) towards the end of the 1960s/early 1970s which were temporarily alleviated by increases in oil prices from 1971 onwards. (In fact, the massive inflow of oil revenues after 1973-74 intensified these problems and created many bottlenecks in the Iranian economy, which severely disrupted the development process and created various social and political tensions.)

The Fifth Development Plan (March 1973 to March 1978) was an ambitious document itself.¹²⁶ It called for a total fixed investment (private and public) of 2,460.4 billion rials of which 62.9% was the public sector's share and the remaining the private sector's share of investment, with the largest allocation (20.4%) going to the industry.¹²⁷

Few months after the implementation of the plan, and following the Arab oil embargo of October 1973, in December of that year an OPEC conference was held in Tehran to discuss the new developments in the oil markets. At this meeting, largely at the instigation of the Shah, in what became known as the Tehran Oil Agreement, the oil prices rose sharply.¹²⁸

As a result of this agreement, Iranian government's oil revenues rose from \$1.85 to \$7 in 1973 and by the end of 1974 it had jumped to \$10.21 per barrel.¹²⁹ More precisely, Iran's oil revenues increased from \$2,399 million in 1972 to \$4,858 million in 1973 and to \$18,523 million in 1974.¹³⁰

Following these massive increases in Iran's oil revenues, the government, or more accurately, the Shah adopted a "big push" strategy for the rapid industrialisation of the country.¹³¹ The Shah wanted to use these oil revenues to make Iran the fifth industrial power by the turn of the century, and dreamed of Iran reaching the gates of the "great civilisation" by then.¹³²

Soon after the oil price hikes, the original Fifth Plan was abandoned in favour of a new and greatly expanded plan. The new plan assumed that during its lifetime (1973-78) gross national product (GNP) would rise by 25.9% in real terms per annum, from 1,165 billion rials in 1972/3 to 3,686 billion rials in 1978/9.¹³³ The plan also called for a 25.9% annual real growth rate for the GDP in the same period, with the oil sector and industry contributing 15% and 18% respectively.¹³⁴

The Revised Fifth plan anticipated the total government revenue during the plan period to be about 8,296.5 billion rials, of which 79.8% was projected to be the share of oil and gas revenues, 14.6% direct and indirect taxes and 1.7% foreign loans.¹³⁵

Total government expenditure were also set at 8,296.5 billion rials, 40.9% of which

was allocated to current expenditure, 43.3% to domestic fixed capital formation, 4.8% to repayment of foreign loans and credits and 10.9% to social services.¹³⁶

Moreover, the plan proposed a total fixed capital formation of 4,698.8 billion rials, of which the public sector's share was 3,118.57 billion rials (66.4% of the total) and the balance, 1,580.23 billion (33.6%) being provided by the private sector.¹³⁷

The level of investment in industry was projected to be 780.1 billion rials of which the share of public sector was 36% and the remaining 64% was the private sector's share.¹³⁸ Out of the total government funds for the industry of 368.09 billion rials, metallurgical industries were to absorb over 85 billion rials (23%), chemical and petrochemicals 76.44 billion rials (20%0) with the rest going to mechanical, electronic, electric, automotive and various other industries.¹³⁹

Table 4.12 shows that the metallurgical industries absorbed the largest share of allocated fixed investments. out of a total of 780.14 billion rials they absorbed 232.57 billion rials (29.7%) and were followed by the chemical and petrochemical industries with the allocation of 163.14 billion rials (20.8%). It is obvious from this table that heavy and capital intensive industries were singled out as the basis of the rapid industrialisation of Iran in the Revised Fifth Plan.

This industrial strategy based on the expansion of capital intensive industries was adopted at a time when Iran's absorptive capacity had already reached a saturation point. As table 4.13 demonstrates, already in 1974 Incremental Capital Output Ratio (ICOR) had reached 9.22 rials. In other words, for every extra unit (rial) of output, 9.22 rials of investment were required¹⁴⁰; a very high rate by any standard. As a result of the implementation of the revised Fifth Plan, the already overheated Iranian economy was

put under such an strain that in 1976, ICOR reached an all time high of 11.17 rials and actually became negative in 1977. This means that in that year, as a result of the implementation of the Revised Fifth Plan, for each additional unit of investment, output actually fell by 2.33 rials (see Table 4.13). This was a very undesirable outcome and very much against the expectations of the government for constantly increasing output.

The adaptation of the "big push" strategy for rapid industrialisation and economic development of Iran with emphasis on the expansion of heavy and capital intensive industries required the availability of large numbers of skilled and semi-skilled workers and a well developed physical infrastructure, both of which were in severe shortages at that time. But these realities were ignored by the Iranian government, particularly the Shah who had set out to reach the gates of the "great civilisation" by the year 2000.

In fact the Plan and Budget Organisation (PBO) had identified the shortage of manpower and inadequate infrastructure as the as the two most important problems hindering the implementation of the plan, but it was overruled by the Shah who wanted Iran to develop as rapidly as possible. With regard to manpower, the PBO had estimated that during the plan the total shortage of labour could be as high as 721,200 with skilled and semi-skilled industrial workers, skilled construction workers and education personnel accounting for the most shortages.¹⁴¹

The implementation of the Revised Fifth Plan did indeed put severe strains on the already over-heated Iranian economy in the latter part of the 1970s. The greatest problems were an over-stretched infrastructure, manpower shortages, fall in food production¹⁴², shortage of foreign currency (at a time of high oil prices), large foreign borrowing, and high inflation rates, with retail and whole prices increasing by 25.1% and 14.1% respectively in 1977.¹⁴³

The enormous increases in the governmental and private expenditure and investment during the Revised Fifth Plan (1973-78) which resulted from large increases in oil prices and Iran's oil revenues not only caused severe strains for the already over-stretched Iranian economy with the resultant shortages of many basic items and high inflation rates, but in the opinion of a few observers led to social, economic and political stability and was a major factor in the downfall of the Shah's regime and the Islamic Revolution of 1979.¹⁴⁴

It is clear from the preceding pages that the indirect effects on the Iranian economy of the oil industry after nationalisation, in sharp contrast to the inter-war period, were immense, and in some respects, she was well served by the ever increasing oil revenues. However, it could equally be argued that the oil revenues were squandered by a corrupt elite on arms purchases, luxurious life style for the Imperial Court, and more importantly on inefficient industries. This last point becomes clear as in the next section the direct effects, i.e. backward and forward linkages of the oil industry on the Iranian economy in the same period will be analyzed.

Table 4.11: Revenues and Expenditures of the Four Development Plans, 1949-73
(billions of rials)

PLAN	FIRST	SECOND	THIRD	FOURTH
REVENUES	Amo't %	Amo't %	Amo't %	Amo't %
Oil	7.8 37	61.0 73	153.0 66	385.0 63
Other (b)	13.2 63	22.2 27	79.0 34	225.0 37
Total	21.0 100	83.2 100	232.0 100	610.0 100
EXPEND'RE				
Agri'ture	5.25 25	17.4 21	47.3 20	92.5 15
Transport & Comu'n	5.75 28	27.3 33	53.8 23	113.8 19
Fuel & Power	1.0 5	c --	32.0 14	94.8 16
Industry & Mines	3.0 14	7.0 8	17.1 7	113.1 19
Social Services (d)	6.0 28	9.3 11	33.3 15	38.9 6
Other Projects (e)	-- --	9.0 11	21.1 9	53.7 9
Total Devl'mnt	21.0 100	80.0 84	204.6 88	506.8 84
Non- Devl'mnt (f)	-- --	13.2 16	27.4 12	103.2 16
Total	21.0 100	83.2 100	232.0 100	610.0 100

Notes:

- a- Only 20% of the planned expenditure was actually disbursed.
- b- Includes foreign and Domestic borrowing.
- c- Included in industry and mines.
- d- Includes health, education, and social welfare.
- e- Includes housing and construction, municipal and regional development and statistics.
- f- Includes repayment of foreign and domestic loans and administrative expenditures.

Source: Fesharaki (1976) p.137.

Table 4.12: Projected Fixed Capital Formation for Industry During the Revised Fifth Plan, 1973-78
(Billions of Rials: Current Prices)

	PUBLIC SECTOR		(1)+(2)	PRIVATE SECTOR		(4)+(5)	(3)+(6)	% of Total *
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Industries								
Food	8.94	15.00	23.94	30.0	10.0	40.0	63.94	8.2
Textiles	5.18	0.50	5.68	38.0	10.0	48.0	53.66	6.9
Cellulose & Printing	17.49	0.30	17.79	43.0	7.0	50.0	67.79	8.7
Chemicals & Petrochemical	75.14	4.00	79.14	64.0	20.0	84.0	163.14	20.8
Metallurgical	82.57	--	82.57	127.0	23.0	150.0	232.57	29.7
Mechanical	27.04	3.50	30.54	4.0	2.0	6.0	36.57	4.6
Electrical & electronic	13.55	--	13.55	20.0	2.0	22.0	35.55	4.4
Automotive	12.13	--	12.13	19.0	6.0	25.0	37.13	4.7
Misc	--	--	--	3.0	--	3.0	3.0	0.3
Technical Assistance	4.32	--	4.32	--	--	--	4.32	0.5
Non-metallic minerals	5.78	1.70	7.48	55.0	20.0	75.0	82.48	10.5
Total	252.14	25.00	302.14	403.0	100.0	503.0	780.14	100.0

Notes: (1) From development (2) From the resources of public enterprise

(4) From private savings (5) From development (*) Due to rounding error may not add to 100

Source: K. Mofid (1987), p.112.

Table 4.13: Incremental Capital Output Ratio (ICOR)
A Measurement of Absorptive Capacity of Iran, 1973-1978
(Billions of Rials: at 1974 prices)

	1972	1973	1974	1975	1976	1977	1978	1979	ICOR 1973-76 Ave
GNP (1) (at market prices)	2635	2940	3124	3185	3602	3702	3238	4155	
FDFCF* (2)	410	457	562	924	1083	1083	858	623	
Growth rate of GNP (3)	--	0.1157 11.6%	0.0626 6.3%	0.0195 1.9%	0.1309 13.1%	0.0277 2.8%	-0.1253 -12.5%	0.2831 28.3%	
Investment/ GNP Ratio (4)=(2)/(3)	0.1556	0.1554	0.1799	0.2901	0.3093	0.2925	0.2649	0.1499	
ICOR (5)=(4)/(3)	--	2.48	9.22	2.22	11.17	-2.33	0.93	0.93	6.27

Note: *- Gross Domestic Fixed capital Formation

Source: K. Mofid (1987), p.136.

5.2.2- The Direct Effects

The framework for the analysis of the direct effects of the oil industry on the Iranian economy was set up in section 3.3.2. This section will only look at the backward and forward linkages that the industry established with the rest of the economy during the 1954-73 period.

5.2.3- Backward Linkages

As discussed before, backward linkages of the leading industry with the rest of the economy can be divided into demand for capital, employment, and purchases of goods and services.

The Consortium that was set up after the 1954 oil agreement to run the Iranian petroleum industry was composed of the seven Major oil companies, CFP of France, and five independent American oil companies. These companies were huge multinational firms whose capital was largely provided by American and European capital markets (with the exception of CFP whose shares are mainly held by the French government), and neither the Iranian government or public held any shares in these companies. Moreover, these companies offered no shares for sale in the Iranian capital markets (which were underdeveloped anyway). As a result, the participation of Iranian capital in the Consortium, Iran's biggest oil producer was nil.¹⁴⁵ However, NIOC which was wholly owned by the state did withdraw from the indigenous capital sources in the form of disbursements allotted to it by the Plan Organisation which in turn had been mainly provided by the oil industry itself. Apart from this, NIOC's other sources of finance were from internally generated funds and long-term loans (although it is not clear whether these loans were raised domestically or in international markets, most probably in the

latter).¹⁴⁶ So one can assume that NIOC had a small effect on the Iranian capital market.

The other important backward linkage of the oil sector is the employment of Iranian nationals in the industry. Due to its capital intensive nature, the total employment level between 1958 and 1972 actually fell in the petroleum industry. This fall accrued in the manual labour category (almost all Iranians), while there was an increase of nearly 60% in the number of Iranian employees categorised as staff (see Table 4.14). This reduction in the industry's workforce took place at a time when oil production was rising at very high rates which indicates greater automation of production and refining activities, and raising of productivity levels. As Table 4.14 shows, between 1958 and 1972, oil production rose from 47,767 to 294,100 cubic meters, while the total employment level fell from 62,033 to 41,812 respectively, showing an increase in productivity from 0.77 to 7.03 thousands of cubic meters per employee.

In 1973-74, the total active force in Iran was 8.3 million, 7.6 million of whom were employed. In that year, the number of the industrial labour force was around 2 million¹⁴⁷. As Table 4.14 demonstrates, in 1972 the oil industry employed 41,812 people, which indicates that just over one-half of 1% of the employed workforce, or 2.1% of the industrial labour force were employed in the industry. Although no accurate data exists on the outflow of trained manpower from the oil industry, Fesharaki states that his inquiries "point to some transfer of technical and managerial skills from the oil industry to the national economy."¹⁴⁸ Obviously, this transfer of skills to the rest of the economy would have been of great benefit to a country like Iran which was suffering from an acute shortage of trained labour force in that period.

The other important backward linkage is the leading industry's demands for goods

and services produced by the domestic economy, which can be divided into demand for fixed assets and demand for current resources.

In the 1954-73 period, demand by the Iranian oil industry for domestically produced fixed assets which were needed for the expansion of the industry were very weak (like the inter-war time). The main reason was that the oil industry is a very capital intensive industry, with the degree of sophistication and automation increasing over time. The Iranian economy, still at a very early stage of industrialisation during that time, was unable to supply the type of capital equipment that the oil industry required. Moreover, the Consortium's local investment, like the construction and expansion of Khark and Mahshahr terminals, were very modest and highly automated, offering little or no demand for domestic labour and capital goods.¹⁴⁹

The only major part played by the domestic economy in supplying the oil industry with capital goods was the construction of Ahvaz Pipe Mill in 1968. The mill, which is a subsidiary of the NIOC, produces pipelines for product and crude oil transportation across the country.¹⁵⁰

The most important part played by the oil industry in forging backward linkages with the Iranian economy during the period under study was the current expenditure of the industry on locally produced goods and services. These included the purchase of electricity from the national grid system, food supplies, industrial equipment, and wage payments for labour. According to a study,¹⁵¹ during the 1961-68 period, the purchase of foreign goods by the Consortium, Iran's largest oil producer until the 1970s, rose by 25 times, while their purchase of domestically produced goods did not show any significant change during the same period. In comparison, NIOC's purchases of domestically produced goods rose in the same proportion as its foreign purchases.

However, in that period, the NIOC's activities were to a large extent peripheral to oil operations, as it was mainly responsible for "non-basic operations". These operations, which were financed by the Consortium and carried out by the NIOC, included housing, medical services, leisure services, and administration.

The above paragraphs show that the oil industry offered little inducement to the Iranian national economy by way of establishing backward linkages with other sectors of the economy. The other direct effect, namely forward linkages that the petroleum industry established with the Iranian economy were, to the contrary, of much greater importance and will be discussed in the following section.

Table 4.14: Employment and productivity in the Iranian Oil Industry in Selected Years

YEAR	STAFF		Manual Labour	Contractor (a)	Total	Production 1000cm	Productivity (b)
	Iranian	Foreign					
1958	8,139	693	48,477	4,724	62,033	47,767	0.77
1961	10,188	847	39,638	1,619	52,292	68,581	1.30
1964	9,888	474	31,564	727	42,653	98,343	2.30
1967	11,659c	--	29,426	1,385	42,740	150,681	3.50
1970	12,547c	--	26,952	1,917	41,416	222,180	5.40
1972	12,831	497	24,931	2,766	41,812	194,100	7.03

Notes:

a- Excludes foreign employees of the contractors.

b- Productivity in thousands of cubic meters per employee.

c- Including foreign staff.

Source: Fesharaki (1976), p.145.

5.2.4- Forward Linkages

As discussed in section 3.3.2.1, forward linkages include the use of the leading industry's products as inputs by other sectors of the economy, or its participation in the domestic industry by the establishment of plants for the production of by-products. In the case of the Iranian oil industry this could mean the use of its products by the rest of the economy either as a source of energy or raw material, and its participation in the industrialisation effort moving into downstream activities like oil refineries and petrochemicals.

5.2.4.1- Provision of Energy to the Iranian Economy

As mentioned previously, before nationalisation AIOC did not consider the Iranian market a very profitable one and, as a result, it did not make any efforts to encourage the consumption of oil products, construct domestically oriented refineries or by-product industries etc.

After the nationalisation of the oil industry in 1951 and the establishment of NIOC, however, the Iranian government, believing that the development of the domestic economy was directly related to the greater consumption of energy (as the economic theories assert), put the expansion of the national distribution network at the top of the list of its priorities. The Distribution Department was taken over by NIOC and was charged with the responsibility of oil product distribution in Iran. The Department, which probably until the revolution was the most important organisation within the company, employed more than half of NIOC's total workforce of nearly 16,000 in 1973.¹⁵² As a result of the efforts of the Distribution Department, total domestic consumption of oil products between 1955-73 rose from 1,948,000 to 15,425,000 cubic meters.¹⁵³ This

represents an annual average growth rate of 11.5%. Moreover, in 1973, nearly 70% of the domestic energy requirements were supplied by the oil industry, and if we add the supply of natural gas and liquid petroleum gas (LPG), the figure rises to about 90% of total energy supplies.¹⁵⁴

The availability of "associated gas" produced as a by-product of oil production, most of which was being needlessly flared, encouraged the government to build a 1,100 kilometre pipeline to the Soviet Union. This pipeline served two purposes. First, it was used to export gas to Russia which in turn paid for the construction of Esfahan Steel Mill by the Russians, and second, it supplied natural gas (probably the cheapest source of energy in Iran) to the main industrial and residential centres of the country.

5.2.4.2- Downstream Activities of NIOC¹⁵⁵

One of the most important forward linkages of the Iranian oil industry with the national economy in the post-nationalisation period up to 1973 was the construction of two new refineries in the 1960s and early 1970s. The first refinery to be built by NIOC was the Tehran Refinery, with a capacity of 85,000 b/d, which began operations in 1968, and the second one was the Shiraz Refinery with a capacity of 40,000 b/d which came on-stream in 1973. These two, together with the Kermanshah Refinery (15,000 b/d) and MIS Topping Plant (34,500 b/d and operated by the Consortium), supplied the domestic market. The Abadan Refinery (one of the biggest of its kind in the world, and run by the Consortium until 1973) was an export oriented refinery. Nevertheless, it supplied a large part of the domestic requirements for oil products as well.

Furthermore, NIOC in the early 1970's, had under construction or study four more domestically oriented refineries: **a second Tehran Refinery (100,000 b/d, completed in**

1975), Esfahan (200,000 b/d), Tabriz (80,000 b/d)¹⁵⁶, and Neka (130,000 b/d, this one was never started).

As refineries are capital and technology intensive, their construction (although they were largely built by foreign companies) and operations were bound to help the diffusion of technology and human skills, stimulating the process of industrialisation in Iran.

5.2.4.3- The Development of the Petrochemical Industry

The other important forward linkage of the Iranian oil sector was the development of the petrochemical industry. In the opinion of planners and oil industry officials, it was an industry in which Iran had a natural advantage, possessing the cheapest inputs in the form of huge associated as well as natural gas reserves and refinery products (naphtha). They believed that the best route for the rapid industrialisation of Iran was the development of the petrochemical industry. Moreover, the petrochemical industry, having the highest added value within the petroleum industry was very attractive to a country like Iran whose oil reserves were depleting at a fast rate. This was based on estimates by experts that with the (then) planned oil production of around 8 million b/d, Iran's oil reserves would be exhausted by the end of the 1970s, leaving an adequate amount to satisfy only the estimated domestic demand of around 1.5 million b/d.¹⁵⁷ The Shah and his government were hoping that by the fast development of an internationally competitive petrochemical industry they would be able to obtain a steady inflow of foreign exchange for the country when the oil revenues ran out.¹⁵⁸

Based on this idea, NIOC began the active development of the industry. The first petrochemical plant was constructed in 1963 near Shiraz for the production of

fertilisers.¹⁵⁹ Moreover, by an Act of the Majlis in 1965, the National Petrochemical Company (NPC) was created as an autonomous subsidiary of the NIOC for the comprehensive planning and development of the industry. By the end of the 1960s, four more chemical plants had been established in Abadan, Ahvaz, Bandar Shahpour, and Khark, which together with the Shiraz plant produced 800,000 tons per year of ammonia products, phosphatic and compound fertilisers, soda ash and sulphuric acid, 40,000 tons of PVC, 600,000 tons of sulphur, 15,000 tons of detergent, 20,000 tons of carbon black, and 30,000 of STPP and other products.¹⁶⁰

Nonetheless, Iran was not satisfied with the development of a domestically oriented petrochemical industry. For the reasons mentioned above, she wanted to build a world scale industry which was able to compete in the international markets. However, Iran only possessed the raw materials (cheap gas and energy) for the production of petrochemicals but lacked other vital inputs: technology, adequate capital, and access to large foreign markets. The 1965 Act had foreseen this situation and therefore, had authorised the NPC to enter into joint venture agreements with foreign companies.

The government, in the late 1960s, was planning to invest about \$11 billion within the Fourth and Fifth Development Plan in the development of petrochemical industries. This was at a time when oil revenues had hardly reached \$1 billion a year. Moreover, the Fourth Plan envisaged that during its lifetime (1968-73), about \$600 million worth of petrochemical products would be exported.¹⁶¹ These expectations, however, did not materialise as the domestic petrochemical industry did not develop according to the hopes of the government. Iran did not have the technological capability to build any petrochemical complex on her own, and she had to buy all the necessary plants and machinery and the chemical processing technology from advanced countries. Therefore,

the participation of foreign companies was vital.

A foreign partner could offer another equally important advantage - large international markets. The Petrochemical industry is an oligopolistic industry, and in the 1960s/1980s, a few large Western multinationals controlled the market for petrochemical products. Furthermore, the largest markets in the world like the U.S., Western Europe, and Japan were heavily protected by high tariffs and trade barriers from imports of these products (see Chapter Eight). It was therefore, almost impossible for a developing country like Iran to penetrate these markets, and she needed foreign partners to help her export petrochemical products back to their home countries. Even if entry into international markets had not been made difficult by oligopolistic behaviour and protection, NPC, or any other Iranian organisation, private as well public, did not have the marketing capability to sell petrochemicals on a large scale in the world markets. So the necessity of having a foreign partner was even more pressing for Iran. However, the choice of the right partner was very difficult and it took Iran some time to find what they believed to be the perfect one.¹⁶² This choice of partner which led to the establishment of Iran Japan Petrochemical Company (IJPC) forms the core of this research and will be discussed in detail in Chapter Seven.

5.2.5- Summary

The discussion presented in the preceding pages shows that during the 1954-73 period, the indirect or fiscal effects of the oil industry were far greater than its direct impact on the economic development of Iran. The government, as the main recipient of oil revenues, managed to increase both its consumption and investment faster than the private sector. Domestic absorptive capacity, public expenditures, and domestic supplies

all increased rapidly as oil revenues went up. The growth of oil revenues was however, due to a fast increase in production and exports of oil rather than increase in price (which was steadily declining throughout the 1950s and 1960s).

Undeniably, Iran's economic development benefitted immensely from the oil sector in many ways. These revenues helped the country to greatly raise her national savings and investment ratios, reduce her chronic balance-of-payments deficits, control inflation, and raise people's standard of living.

However, the almost total reliance on oil revenues created many distortions to the economy. First, as oil revenues are in the form of painlessly earned foreign currency, the need for the mobilisation of national savings in the form of taxes were ignored. Besides, these revenues allowed both the public and private sector to greatly expand their consumption (in the form of defence, welfare expenditure and imports) without a corresponding increase in domestic production and, moreover, reduced the availability of goods for export.¹⁶³ Second, the huge inflow of foreign currency led to the overvaluation of the domestic currency (the so-called "Dutch Disease") which in turn caused the cheapening of imports and made the domestic industry uncompetitive in international markets.

Finally, the most important shortcoming of the oil sector in this period was its failure to establish forward and backward linkages with the rest of the national economy. An input-output table calculated for 1969 showed that for every 100 rials of final output, the oil industry bought 9.9 rials of goods and services from other sectors of the domestic economy, and in turn supplied them with 16.5 rials worth of petroleum products.¹⁶⁴ This clearly demonstrates the low degree of integration of the oil industry with the Iranian economy in the period under study.

As the preceding sections showed, while providing the Iranian economy with cheap energy and raw materials and encouraging the development of such downstream activities as refining, gas production, and petrochemicals, the oil industry still failed to play a major role in the industrialisation of Iran, usually something expected from the leading sector of the economy.

The crucial importance of the contribution of the leading industries such as textiles, iron and steel, rail-roads and automobiles to the industrialisation process of some of the Western countries in their early stages of development is well known. But unfortunately, as we have seen, the Iranian oil industry in the 1954-73 period failed to play such a role.

6.0- Conclusion

This chapter presented a review of the political development and the role of the state in the economic development of the country. More importantly, we tried to analyze the role of oil in the economic development in 20th Century Iran.

It was explained that the oil industry started in Iran in the first decade of the century with the granting of a concession to William Knox D'Arcy. Later on, the British government having realised the strategic importance of oil took a majority stake in the Anglo Persian Oil Company which had been set up to exploit Iranian oil. The Iranians hopes that the Concession would provide the government with sufficient and steady source of income, however, did not materialise. This caused much friction between the Iranian government and the Company and between the former and the British government for many years. For various reasons, like the backward state of the Iranian economy and APOC's (or AIOC) reluctance, no strong forward or backward linkages

were established with the rest of the Iranian economy. Moreover, due to the small share of Iran from the company's profits, indirect or fiscal influences of oil revenues were inconsequential for the development of the Iranian economy. As a result, oil revenues played almost no role in the economic development of Iran in the inter-war period.

With the end of the Second World War and the change in the international situation and, more crucially, the weakening of the authoritarian regime in Iran, the Iranian people began to call for a greater share of oil revenues. These calls led to the nationalisation of the industry by Dr Mossadegh in 1951. AIOC and the British government, which were not prepared to allow such a profitable venture to be taken away from them, arranged, with the help of the Americans, a military coup that led to the downfall of Mossadegh and the 1954 Oil Agreement between the Consortium and Iran. This agreement effectively reversed the process of nationalisation, but also substantially increased Iran's income from her oil resources as compared to the pre-nationalisation period.

After the 1954, the government, with the help of ever increasing oil revenues, began a process of rapid economic development and industrialisation of Iran. The major difference with the pre-war situation was that the huge oil income allowed the regime to be independent of various social classes and pursue an active interventionist economic policy. This led to improvements of the country's infrastructure and the establishment of various heavy as well as light industries.

Yet again, the oil industry, being foreign dominated failed to initiate any direct linkages with the Iranian economy. The development of such links (especially forward linkages) fell to NIOC and particularly NPC. The latter which had been set up to promote the development of the domestic petrochemical industry succeeded in

establishing a few plants in the 1960's. But in order to build a world scale industry, NPC needed the co-operation of foreign companies, and hence the search for suitable partners began.

Notes:

1. For analysis of the Iranian economy during this period see: Lambton (1970), Issawi (1970).
2. Issawi (1971), p.20.
3. Lambton (1953), p.53.
4. For writings on these reform movements see: Lorenze (1971), Farmanfarmayan (1968), and Adamiyat (1945).
5. See Issawi (1970), chapter 8.
6. See Kazemzadeh (1968), pp.149-385; and Issawi (1971), pp 358-61 for details of the sales of offices and titles and the granting of the concessions.
7. See Issawi (1971), pp.130-131.
8. See Kazemzadeh (1968), Entner (1965).
9. See Yaganegi (1934), chapter 3.
10. See Yaganegi (1934), chapter 2; and Issawi (1971), chapter 8.
11. For a detailed list of the modern manufacturing plants which were set up during this period up to the First World War, see Ashraf (1980), pp89-104.
12. See ibid and Olson (1980) for the details of the barriers in setting up modern manufacturing companies and the causes of their failures during this period.
13. See above references.
14. See Karshenas (1990), pp52-58.
15. Ibid, pp59-60.
16. For the details of the Constitutional Revolution see Abrahamian (1982), pp.50-102.
17. For political developments during this period see Abrahamian (1982), pp.102-118).
18. For a full account of these negotiations see FERRIER, R.W. (1982), pp.27-47.
19. Article 1 of D'Arcy Concession. For the full text of the D'Arcy Concession see Ferrier (1982), op cit, pp.640-643.
20. Article 6, D'Arcy Concession.

21.Article 2, D'Arcy Concession.

22.Article 7, D'Arcy Concession.

23.Until 1935 Iran was known as Persia in the world and official circles despite the fact that the country had always been known as Iran by its people and governments.

24.Article 10, D'Arcy Concession. "Net profits" implied net integrated profits of all companies dealing with Persian oil.

25.Article 4, D'Arcy Concession.

26.See Ferrier (1982), op.cit, Chapter 3, for a detailed discussion of the negotiations which led to the participation of the Burmah Oil Company in the D'Arcy Concession.

27.Ibid.

28.See Ferrier (1982), Chapter 3 for the formation of APOC.

29.See Ferrier (1982), pp.115-16, for a discussion of the difficulties of producing oil in southwestern Iran.

30.See Ferrier (1982), Chapter 5 for the concerns of the Royal Navy over fuel oil supplies and the discussions between the APOC and the British government for the financial participation of the latter in the Company.

31.Ferrier (1982), p.202.

32.Ibid.

33.See *ibid*, pp.202-203 for the Russian government's objections to the British government's participation in APOC. For some views on why the British government bought a controlling stake in the APOC see Ferrier pp.204-205, KENT, Marian, "Oil and Empire: British Diplomacy and Mesopotamian Oil 1900-1920", London, 1976 and MONROE, Elizabeth, "Britain's Movement in the Middle East, 1914-1956", London, 1963.

34.See Ferrier (1982), pp.206-210 for the British government assurances to the APOC about non-interference in the Company's affairs.

35.See Ferrier, *op cit*, pp.365-371 for a detailed discussion on the negotiations between the government of Iran and APOC to conclude a new agreement and the text of the Armitage-Smith Agreement.

36.See Abrahamian (1982), chapter 3; and Keddie (1981), p.87.

37.See Kazemi (1980).

38.Abrahimian (1982), pp.131-135.

39. For a comprehensive study of the life and achievements of the Reza Shah see WILBER, Donald N., "Riza Shah Pahlavi: The Resurrection and Reconstruction of Iran", New York, 1975.
40. Banani (1961); and Arasteh (1962).
41. For the development of modern banking see Bharier (1971), pp.237-59.
42. Karshenas (1990), p.69.
43. Ibid.
44. UN 1965, p.59.
45. See Moghadam (1956), chapter iv.
46. For details see U.K., Department of Overseas Trade (U.K., DOT), "Economic Conditions in Persia", 1925, pp.1-9.
47. See *ibid*, p.17.
48. Persian or Iranian year begins on 21th March and ends on 20th of March of the following year of the Christian calender.
49. Fesharaki (1976), p.12.
50. Ibid.
51. U.K., DOT, March 1930, p.13.
52. Karshenas (1990), p.70.
53. Ibid, p.71.
54. Issawi (1971), p.375.
55. Karshenas (1990), p.75.
56. See Moghadam (1956), pp.170-179.
57. See Karshenas (1990), chapter 6 for the state of the Iranian agriculture during this period.
58. See Hershlog (1964).
59. See Ferrier (1982), pp.603-631, for the details of the negotiations between Iran and APOC to conclude a new Concessionary agreement in the late 1920s/early 1930s.
60. Ferrier, *op. cit*, p.628.
61. For details of the dispute see STOCKING, C.W. (1971), PP.25-34.

62. For the details of the new concessionary agreement OF 1933 see STOCKING (1971), pp.34-36, LONGRIGG, S.H. (1954) pp.59-60, and LONGHURST, H. (1959), pp.77-80.

63. See Naficy, F., in Mostofi and McLachlan (1991), pp.2-5, for discussions between the Iranian government and APOC over the employment and training of Iranians by the company.

64. For the text of the agreement see C. Hurewitz (1956), pp.188-96.

65. For explanation of this theory see Alan Gelb (1988), chapter 2; EIU Report (29-8-68), Part B, Volume I; Fesharaki (1976), chapter 1; J. Amuzegar (1991), in B. Mostofi and K. McLachlan (eds).

66. See above references.

67. See Ferrier (1982), pp.352-355 for the Iranian government's attempts to purchase these shares and the British government refusal. Also see E.L. Woodward and R. Butler (eds), "Documents on British Foreign Policy, 1919-1939", First Series, Vol.IV, London, Foreign Office (1952), p.1258.

68. See Ferrier (1982), pp.400-403 for details of Iranians by APOC.

69. According to the Iranian law of 1935 the Company changed its name to Anglo Iranian Oil Company in 1936.

70. Longrigg (1954), p.65.

71. Ibid.

72. U.N (1950), chapters 2 & 3.

73. Ibid.

74. Ferrier (1982), p.398.

75. M. Nemazee and S. Nakazian (1954), p.93.

76. Ibid.

77. For a discussion on the effects of the oil industry on the Iranian economy in the inter-war period see J. Amuzegar and M.A. Fekrat (1971), chapter 2; and Fesharaki (1976), chapter 2.

78. See Fesharaki (1976), chapter 2.

79. See EIU Report (1968), p.38.

80. J. Amuzegar (1991), p.25.

81. Fesharaki (1976), p.16.

82. See J. Amuzegar (1991), p.26.; and Fesharaki (1976), pp.17-18.
83. See above two references.
84. Ibid.
85. See above two references and U.N., Public Finance Information Papers: Iran (New York, 1951), p.21.
86. For detailed studies of political events during this period see Abrahamian (1982), Keddie (1981), and Katouzian (1981).
87. For the provisions of the 1947 Act and its consequences for AIOC see S.H. Longrigg (1958), pp.159-160.
88. For the details of the Supplemental Agreement see S.H. Longrigg (1954), p.160.
89. Ibid.
90. Ibid, p.161.
91. Ibid. for the details of the Saudi Arabian-ARAMCO agreement see Longrigg, p.120.
92. Ibid, p.161.
93. There is much material available on the Iranian oil nationalisation and the ensuing dispute between Iran and Britain, some of which are shown below:
S.H. Longrigg (1954), pp. 161-67; G.W. Stocking (1971), Chapter 7; H. Longhurst (1959), pp.137-46; N.S. Fatemi (1952), A.W. Ford (1954), M. Ghassemzadeh (1968), Z. Mikdashi (1966), F. Fesharaki (1976), L. Drollas and J. Greenman (1989).
94. Longrigg, op. cit, p.168.
95. Ibid, p.167.
96. For details see Longrigg, pp.167-173 and also sources mentioned in note 93 above.
97. G.W. Stocking (1971), pp.158-160.
98. Fesharaki, F., (1976), p.51.
99. Stocking, op.cit, pp.159-161.
100. Ibid, p.161.
101. Ibid.
102. Stockings, op.cit, p.157.
103. For further details see Stocking, p.162.

104. See Karshenas (1990), chapter 4, for details of economic situation in this period.

105. See Saikal (1980) for details of these pressures, especially from the United States.

106. For political developments in this period see Ashraf and Banuazizi (1980), Abrahamian (1982), Bashiriyeh (1984), Karshenas (1990), and Saikal (1980).

107. Ayatollah Khomeini was the leader of this uprising. When it was quashed, he was exiled to Iraq until 1978 when he left there for Paris to lead the Islamic Revolution. In 1979, he returned to Iran triumphant and became its spiritual leader. See above references for details of the June 1963 uprising.

108. Karshenas (1990), pp.91-93.

109. See Karshenas (1990), chapters 4 and 5 for the creation and policies of these economic institutions in this period.

110. IMDBI was a private joint stock company which was formed by domestic private individuals and companies, and foreign investors with the explicit aim of providing long-term, low-cost finance to large, private industrial companies. Although the bank was a private concern, a major part of its initial capital was provided by the government, and moreover, it took over the responsibility for the disbursement of the largest part of the government's loans to the domestic industry. This bank does not concern us in this chapter, as it played no part in providing finance to the nationalised industries, including the petrochemical industry which was owned by the NIOC. For the activities of IMDBI see above note.

111. Figures presented in this chapter for the oil revenues may be at variance with one another. These variations are due to differences between the Iranian financial year and the Consortium's, rates of conversion of currencies, discrepancies among reporting sources, timing of oil export receipts and so on, and therefore, should be considered as close approximations rather than exact magnitudes.

112. Fesharaki (1976), p.133.

113. Fesharaki (1976), p.134.

114. Fesharaki (1976), pp134-36. In fact the Plan Organisation implemented five development plans before the revolution of 1979, but here we are mainly concerned with the Third, Fourth and Fifth plans in which the establishment and expansion of the domestic petrochemical industry was singled out for special attention.

115. Ibid.

116.Fesharaki (1976), pp.135-36. For works on development planning in Iran see George Baldwin (1967); Julian Bharier (1971); and Kamran Mofid (1988).

117.J. Amuzegar (1991), p30.

118.Calculated at the new official exchange rate of \$1=IR 75.75 (as from 1957).

119.Amuzegar (1991), p31.

120.Ibid, p.32. For details see Bank Markazi Iran, "Annual Report", Table 56.

121.Amuzegar (1991), p.31.

122.Ibid.

123.J. Amuzegar (1991), p.33.

124.Ibid.

125.See Karshenas (1990), chapter 1 (especially pp.21-24), and chapters 8 for a more detailed definition of the term, and its application to the Iranian economy during the 1960's/1970's period.

126.Mofid, K., p.90.

127.Ibid.

128.For the details of this OPEC meeting see ODELL, Peter R. (1979), Chapter 7, especially p. 107 and chapter 9.

129.Mofid (1987), p.93.

130.Ibid.

131.Mofid (1987), p.94.

132.For the details of the "big push" strategy of industrialisation and Shah's dreams for Iran see Mofid (1987), op.cit., pp.94-98.

133.Mofid, op.cit, pp.99-101.

134.Ibid.

135.Mofid, op.cit, p.100.

136.Ibid. See ibid, pp.100-110 for a comprehensive analysis of the Revised Fifth Plan.

137.Mofid, op.cit, p.100.

138.Mofid, op.cit., p.110.

139. See *ibid*, pp.110-111.

140. For an in-depth analysis of Iran's absorptive capacity constraints in the 1959-1979 period see Mofid, *op.cit.*, pp.132-143.

141. See Mofid, *op.cit.*, Table 3.4, p.96 for a breakdown of the estimated manpower shortages during the Fifth Plan.

142. See Mofid, pp.119-128 for the fall in food production and huge imports of agricultural products during the Fifth Plan.

143. For the details of inflation rates in the 1970s see Mofid, *op.cit.*, p.113.

144. For a comprehensive discussion of this subject see LOONEY, Robert E., "Economic Origins of the Iranian Revolution", Lexington Books, 1982; KEDDIE, Nikki R., "Roots of Revolution: An Interpretive History of Modern Iran", Yale University Press, 1981; ABRAHAMIAN, Ervand, "Structural Causes of the Iranian Revolution", MERIP Reports, NO.87, May 1980; HALLIDAY, Fred, "The Genesis of the Iranian Revolution", Third World Quarterly, October 1979; RAZAVI, H. and VAKIL, F., "The Political Environment of Political Planning in Iran, 1971-1983: From Monarchy to Islamic Republic", Westview, 1984.

145. See Stocking, *op.cit.*, pp.157-58, for further information on this point.

146. See Table A.4, pp.299-305, in Fesharaki (1976)

147. Fesharaki (1976), p.148.

148. *Ibid*.

149. J. Amuzegar (1991), p.36.

150. Fesharaki (1976), p.143.

151. See *ibid*, p.144.

152. Fesharaki (1976), p.217.

153. For a complete breakdown of the consumption of petroleum products in Iran from 1950 to 1974 see Fesharaki (1976), Table 10.4, pp.246-47.

154. *Ibid*, p.142.

155. This section is based on the data supplied by Fesharaki (1976), pp.212-215.

156. Both of these refineries became operational in the late 1970's.

157. For these estimates of Iranian oil reserves see Fesharaki (1976), chapter 8.

158. Mofid, op. cit., p.56.

159. Mofid, Op.cit., p.45. Although it was a small scale plant producing a small amount of fertilizers for the domestic markets, nonetheless, it had to be shut-down for six months a year due to lack of adequate demand.

160. Baqer Mostofi in Baqer Mostofi and Keith McLachlan (1991), p.136. For a complete list of the production of petrochemical products in 1974 in Iran see Fesharaki (1976), Table 7.10, p.177.

161. Mofid, op.cit., p.56.

162. This section is based on a personal interview with Dr Baqer Mostofi, the former Chairman of NPC and IJPC on 3 June 1992.

163. See Mofid, op.cit., Chapter 4 for a comprehensive discussion of Iran's imports and exports policy in the post-war years.

164. J. Amuzegar (1991), p.37.

CHAPTER FIVE

THE HISTORY OF MITSUI BUSSAN

1.0- Introduction

It was stated in the introductory chapter that in order to understand why some joint ventures are successful and some are not, one needs to look at the management style and organisational characteristics of its parents. Therefore, in the present chapter, the historical development, management style, and organisational characteristics of Mitsui Bussan¹, the main Japanese partner in the petrochemical joint venture with Iran will be examined.² In the next chapter, the managerial and organisational characteristics of the Iranian partner will be discussed.

The contents of the chapter will be as follows: first, a short history of the formation of the Mitsui Zaibatsu (conglomerate)³ and Mitsui Bussan in the 19th and the first half of 20th Centuries will be presented. Then the re-merger of the the Group at the end of the American Occupation which had dissolved the zaibatsu, and the problems which it faced in this endeavour, will be discussed. The management style and organisational characteristics of the Group, particularly the Bussan as compared to other groups and trading companies, will then be analysed. Next, various functions performed by Japanese general trading companies, and their role, with special reference to Mitsui Bussan, in the development of the Japanese petrochemical industry and investment in the exploitation of overseas resources, will be examined. Finally, the weakness of the Mitsui Group in oil business will be discussed in detail, as it is believe this was a major factor in influencing Mitsui Bussan's decision to enter into the petrochemical joint venture with Iran.

2.0- The Pre-War History of Mitsui⁴

The foundation of the Mitsui (meaning three wells) business goes back to the 17th century. Sokubei Takatoshi Mitsui, a former samurai who had renounced his title and had joined the ranks of *jonin* (merchants), established a sake and soy brewery in Ise, central Japan, in 1615. Later on his eldest son opened a general goods store under the name of Echigoya in Edo (now Tokyo) from which the now famous Mitsukoshi Department Store developed. It was, however, one of the Sokubei's younger sons, Hachirobei (1622-1694) who laid the foundations of the present business by opening money exchange shops in major cities of Japan.

Throughout the rule of the Tokugawa Shogunate (1603-1868), the fortunes of the Mitsui family took off as they were appointed the official purveyors to the Shogunate. During this period, the Mitsui family was in firm control of the business through an elaborate system of family members' participation in various aspects of management and through the "*Omotokata*" or the holding company.

With the Meiji Restoration of 1868, the fortunes of the Mitsui family also changed. Their business, which had been suffering towards the end of the Tokugawa period, received a major boost as it was again appointed as purveyor to, and tax collecting agent of the new government. The Meiji Government favoured the Mitsui family for several reasons. First, the family had contributed generously to their war efforts against the Tokugawa Shogunate. Second, a few of the Meiji oligarchs had served as trainees with Mitsui businesses and, therefore, as is customary in Japan, owed their allegiances to the family. Third, and probably the most important of all, the government needed the co-operation of the largest and most respected business establishment in the country to carry out its reforms of the domestic economy which was in a precarious state.

After the opening of her ports by Commodore Matthew Perry in 1853, Japan had been forced into signing unequal treaties which took away the government's tariff autonomy and allowed foreign merchants to completely dominate Japan's foreign trade. The new government, unhappy with the situation, directed the leading merchants of Tokyo (including the Mitsuis) to establish the Tokyo Boeki Shosha (Tokyo Trading Company) with the aim of counteracting the dominance of foreign trading houses.⁵ The House of Mitsui also sought to expand domestic and foreign trade through its retail shops in major cities in 1874. These efforts, however, were not successful, and in 1875 the House, with advice from Inoue Kaoru, an oligarch who had earlier received business training from the House of Mitsui and now occupied an important position in the Ministry of Finance⁶, reorganised their business. As part of this reorganisation, a new company, Mitsui Gumi Kokusan-kata (National Products Company), was formed to carry out various trading activities. Various prefectural branches were also reorganised to deal in various products in the domestic market as well as to carry out exchange transactions and the sale and transportation of rice which had been collected as taxes on behalf of the government.⁷

Kokusan-Kata's first big business came when the company, at the urging of the government, began to export rice to Europe, and in this way it became the first Japanese company to conduct foreign trade.

While helping the Mitsuis to set-up Kokusan-kata, Inoue established his own trading firm, Senshu Kaisha, to export rice and market the output of lead, silver, and coal mines owned by the government. Meanwhile, In July 1876, the House of Mitsui, with the persuasion and help of Inoue, set up the Mitsui Bank along modern lines.

Due to organisational problems and lack of information on foreign markets,

Kokusan-kata was not successful in its export activities. After the establishment of Mitsui Bank, with the encouragement of the Finance Minister, the Mitsuis merged Senshu Kaisha with Kokusan-Kata in 1876 to form Mitsui Bussan Kaisha. Initially, Bussan was capitalised at only 50,000 yen which the Mitsui Family reluctantly provided through a loan by the Mitsui Bank. With the formation of Bussan, one of the greatest trading companies of all times, known all over the world as Mitsui & Co was born.

At the start of its operations in 1876 Bussan's main exports were coal from the state owned Miike mine in Kyushu and surplus rice. The firm also imported blankets and woollens for the army. The most profitable of these activities was the export of coal which was being sold to Bussan at cost and which it exported to Shanghai and Hong Kong at huge profits. The profitable coal export became the biggest source of revenue for Bussan especially after the Mitsui Zaibatsu bought the Miike mines from the government at a very cheap price and put Bussan in charge of the marketing of its output. Undoubtedly, huge profits from the coal business helped the Mitsuis to expand their range of activities and establish Mitsui Zaibatsu as the most powerful zaibatsu in the pre-World War Two period.

One other important factor in the creation of the Mitsui Zaibatsu was the combination of the Mitsui Bank and Bussan, with the former providing credit to the latter to enable it to expand its trading activities both in the domestic and international markets. In fact, the combination of three pillars of the Mitsuis' businesses: the Bank, Bussan, and Mining provided the House with strong foundations for the establishment of Mitsui Zaibatsu.

As discussed earlier, from its inception, Mitsui Bussan mainly did business with the government. This business, however, began to decline around the late 1880s. But the

start of the industrialisation of the Japanese economy in the last decade of the 19th Century opened new avenues of business for Bussan. From then on Bussan expanded its operations by taking an active part in the development of the cotton and silk industries. It provided the cotton industry with imported raw cotton, weaving machinery and coal, and then exported cotton yarn and cotton cloth, and at the same time it was engaged in silk export. This was the beginning of the development of Bussan into a general trading company.⁸ Moreover, the Sino-Japanese and Russo-Japanese wars greatly stimulated production of the Japanese industries which in turn provided ample trading opportunities for Mitsui Bussan.

But probably the greatest stimulus for the growth of and the development of Bussan into a general trading company and the expansion of Mitsui Zaibatsu, came with the start of the First World War. In fact the Great War provided the biggest impetus to the development of Japanese capitalism, tripling its GNP from 1914 to 1919 and almost quintupling its industrial production during the same period.⁹

Mitsui Bussan was a major benefactor of the war as its sales volume jumped from 400-million yen before the war to 2.1 billion yen in 1919, and its paid up capital was increased from 20 million yen to 100 million in 1920. The number of commodities handled by Bussan also rose to over 1,000 items.¹⁰ Mitsui's penetration of the Chinese market also became very deep during and after the war.¹¹

However, with the rapid expansion of operations, new problems also arose for Bussan, the most important of which were the emergence of powerful rivals and the rapid growth of the manufacturing sector. The outbreak of the First World War generated a huge expansion of trade in raw materials and output of heavy and chemical industries which in turn led to the emergence of many new trading companies. In 1917

the Furukawa Zaibatsu established Furukawa Shoji, in 1918 the Mitsubishi Zaibatsu established Mitsubishi Shoji, and Asano Bussan and Kuhara Shoji were set up in 1918 and 1919 respectively. Suzuki Shoten which had been established in early Meiji period grew dramatically during the war years and was almost catching up with Mitsui Bussan (the company, however, went bankrupt in 1927 due to excessive speculation). The rapid growth of these and numerous other trading companies caused a decline in Mitsui Bussan's share of Japan's total foreign trade from a peak of 25.6% in 1914 to a low of 10.9% in 1925 rising slightly to 12.1% in 1931.¹²

Apart from losing its market share, Mitsui Bussan also became increasingly concerned about the expansion of capital tie-ups between its rivals and manufacturers. In fact those trading houses that had been separated from trading divisions of their respective zaibatsu groups like Mitsubishi Shoji, Kuhara Shoji, Asano Bussan, and Kukuwara Shoji emphasized the products from manufacturers of the same group. And many of these trading companies established their own manufacturing companies or invested in manufacturers.

The other problem facing Mitsui Bussan in the post-World War I period was its relationship with domestic manufacturers. In their early stage of development, Japanese manufacturers suffered from inadequate financial resources, lack of knowledge of markets, particularly overseas ones, and unknown brand names. So the manufacturers, especially the independent ones, became heavily dependent upon Mitsui Bussan to provide them with almost unlimited financial resources, and extensive international marketing network, and a prestigious name. The massive sales resulting from the war, however, provided the manufacturers with large internal funds for further expansion as well as the establishment of their own marketing networks. The penetration of foreign

markets during the war also gave them the opportunity to establish their own brand names in the international markets. These developments gradually eroded the manufacturers dependence on Bussan for sales of their products.¹³

In order to counteract the above two problems Mitsui Bussan adopted a new policy. Traditionally Mitsui Bussan had concentrated on trading on a commission basis and small scale investment and had avoided long-term fixed investment. But under the new policy Bussan invested in manufacturing companies by extending advance loans or purchasing shares, and sent its directors to them and took hold of their marketing by intervening in their internal management.

As a result of the new policy, Bussan's investments in manufacturing rose sharply from 1916 onwards. When, in the 1920s, heavy and chemical industrialisation proceeded, it started to invest in heavy industry and chemical firms. In fact, the Mitsui Zaibatsu had entered chemical industry earlier. When Japan could not import sufficient quantities of chemicals during World War I, Mitsui Mining developed its own petrochemical complex through which Mitsui Zaibatsu entered, for the first time, the field of heavy chemical production, and hence Japan's petrochemical industry was founded.¹⁴ Mitsui Zaibatsu was in fact the biggest investor in pre-war Japan in both domestic and foreign markets.

Among other industries which Bussan made investments in were silk and cotton, foodstuffs and sundry goods. Many of these investments were made as the price for agreements involving sales of raw materials or purchases of products. It also invested heavily in natural resources development overseas mainly in China and in Southeast Asia. By the beginning of the Showa period, Bussan had invested in joint development of anthracite coal in Korea, managed the manganese mines in Portuguese Goa, established affiliate firms in the Philippines to fell lumber, and Borneo Oil Fields.¹⁵

Mitsui Zaibatsu together with its arch rival Mitsubishi Zaibatsu were in the forefront of Japan's industrialisation. There were however, major differences between the two, both in the types of businesses in which they participated and their management styles. While Mitsui emphasised trading of raw materials (especially coal) and general merchandise both within the group and with independent firms, Mitsubishi concentrated on the production and trading of heavy industrial goods produced within its own group. This difference of emphasis continued after the war and has persisted to-date.

Moreover, the management and organisational styles of the two zaibatsu were very different. Mitsui had a decentralised management structure allowing for entrepreneurial initiative; a tradition which went back to the beginning of the business in the Tokugawa period. Mitsubishi Zaibatsu, on the other hand, had a tight centralisation policy which concentrated almost all decision making and initiatives in the hands of Iwasaki presidents (the founding family and owners of Mitsubishi Zaibatsu until World War II) and their staff.¹⁶

The other main difference between the two leading zaibatsu was the role of their trading companies within their respective groups. Mitsui Bussan played the main role in the expansion and development of the Mitsui Zaibatsu into one of the world's greatest conglomerates. But in the case of Mitsubishi, it was the Zaibatsu which established the Mitsubishi Shoji as its trading arm with the responsibility of promoting heavy industrial goods produced by various Mitsubishi Zaibatsu firms (Shoji however, did trade in goods produced by enterprises outside the Mitsubishi Group).

2.1- The Demise of the Zaibatsu

The war in China, the colonisation of Manchuria in the 1930s and the start of the Pacific War in 1941, brought about great business opportunities for the zaibatsu who were closely connected with the military. As a result of huge military purchases and mergers of smaller producers in the fields of heavy and military industries under the guidance of wartime Control Boards, the zaibatsu-related enterprises grew very rapidly. As the zaibatsu banks and financial institutions could not meet demands for ever increasing amounts of capital from their respective zaibatsu members to finance their fast expansion, the latter had to turn to outside sources for funds.

On the other hand, mainly for publicity reasons, the Mitsubishi and Sumitomo Zaibatsu (the third biggest zaibatsu whose origins go back to the Tokugawa period) decided in 1937, to change the form of their holding companies into open joint stock companies. This arrangement, nevertheless, had hardly any effect on the tight control exercised by the Mitsubishi and Sumitomo families over their respective zaibatsu.¹⁷

Mitsui followed with a somewhat different arrangement. It merged its holding company, Mitsui Gomei, with Mitsui Bussan into one joint stock company in 1940. This new arrangement once again demonstrated the dominant position of Bussan within the Mitsui Zaibatsu.¹⁸

However, once outside capital entered into the operating companies of zaibatsu, the exclusive ownership and control of these companies by zaibatsu families was greatly weakened through the process of fast growth. In order to offset this dwindling ownership position, Mitsubishi and Somitomo strengthened internal cohesion through tighter organisation and personal leadership (the strong leadership of Iwasaki Koyata, the head of Mitsubishi Zaibatsu, is especially notable in this period).

But Mitsui did not succeed in inserting central authority over the diverse enterprises of the zaibatsu. Mitsu Bussan, now in control of the entire zaibatsu, was primarily concerned with the expansion of its own operations and did not pay enough attention to its role as the zaibatsu's holding company. A case in point is the behaviour of Toshiba, a major member of the Mitsui Zaibatsu as compared to its equal number, the Mitsubishi Heavy Industries. The former behaved as if it were an independent zaibatsu, while the latter was kept firmly in control. As a result of these problems, Mitsui re-established its holding company known as Headquarters Company (*honsha*). Moreover, all members of the eleven Mitsui joint families were relieved of any direct responsibility and influence and became mere shareholders.¹⁹

As mentioned before, due to fast expansion during the war, zaibatsu were no longer able to meet all capital requirements of their operating companies, and so the latter had to rely increasingly on banks for working and investment capital. At the same time an unprecedented merger and concentration movement within the Japanese banking sector took place which reduced their numbers from 498 in 1936 to 228 in 1940 and to 61 in 1945. It was during this time that the 'big six' of the Japanese financial capital: Sanwa, Mitsubishi, Sumitomo, Yasuda, Mitsui, and Daiichi (in that order) emerged. In 1943 the last two merged to form the Teikoku Bank which became the largest. By 1944 the 'big four' held 59.6% of all deposits and made 75.9% of all business loans.²⁰

As a result of the increasing role of the big banks as providers of capital, bank-centred industrial groups emerged, replacing the original zaibatsu concept. In fact, the big banks replaced the zaibatsu families who had lost their managerial control and assumed direct managerial responsibilities. These events during the last stages of the war laid the basis for the dissolution and eventual demise of zaibatsu after the war. When

these zaibatsu re-grouped in the 1950s, the owner families no longer had any shares or influence in their former companies, instead, the largest six banks became the cores of new large financial-industrial groupings which had succeeded the pre-war zaibatsu.

2.2- The Dissolution of Zaibatsu and Trading Companies

After the 1945 occupation of Japan by U.S. forces, a process of democratisation and deconcentration of Japanese institutions and businesses began. The zaibatsu, which were accused of co-operating with the militarists and of being centres of excessive economic power were especially targeted for reform. Under the provisions of the 1947 Anti-Monopoly Act which was promoted by the Americans, holding companies were banned, and the process of deconcentration and divestiture of zaibatsu was instituted. Moreover, both Mitsui Bussan and Mitsubishi Shoji were designated as holding companies on 28 December 1946 and were placed under the control of the Holding Company Liquidation Commission. While these two companies themselves had made plans for splitting up, SCAP issued a memorandum on 3 July 1946 ordering their dissolution. Under the dissolution provisions, Mitsui Bussan with 7,058 employees was broken up to about 233 companies, and Mitsui Shoji with 4,086 employees was divided into about 139 companies.²¹

The treatment of Mitsui Bussan was particularly harsh. The Company was hoping for a directive ordering the disposal of shares or reorganisation into a number of smaller units, but instead, the directive called for the liquidation and dissolution of Bussan. According to Mitsui, "It [the dissolution order] was much more severe than anyone in Mitsui Bussan, or anywhere else could possibly have foreseen."²²

Soon after liquidation, the progenies of the two big trading companies began to

regroup themselves again in preparation for grand mergers, but their efforts were thwarted by the Occupation officials. The boom (and later the bust) created by the start of the Korean War, however, provided opportunities for the emergence of industrial groupings along the lines of pre-war zaibatsu, and re-merger of former trading companies. Mitsubishi Shoji was re-organised on 1 July 1954, while it took Mitsui Bussan Until 15 February 1959 to re-establish itself.

3.0- The Emergence of Industrial Groupings

From a purely legal point of view, the Americans succeeded in eliminating the concentration of economic power in Japan. The deconcentration programme, which ended in 1951 with the disbanding of the Holding Company Liquidation Commission, also contributed to newly created companies having a real opportunity to flourish in formerly controlled key industries.²³ By circumventing the anti-trust regulation, however, the former zaibatsu companies regained economic strength, this time in the economic form of *Kigyo Keiretsu* or industrial groupings. The process by which the former zaibatsu members managed to re-group themselves is believed to be as follows:²⁴

In the late 1940s, the top executives of the former three top zaibatsu, Mitsui, Mitsubishi, and Sumitomo, began to meet regularly in order to discuss the future of the now dissolved zaibatsu and what could be done to establish close co-operation among the firms that had once been the main pillars of the zaibatsu. As the zaibatsu banks had not been affected by the deconcentration policy, they naturally played the key role in this process. The only exception was the Mitsui Bank, which after separation from the Daiichi Bank which together had formed the wartime Teikoku Bank, was in a relatively weak position and was relegated to the 8th position among city banks.²⁵

The Fuji Bank (formerly Yasuda), Sanwa Bank and Daiichi Bank²⁶ also began

to establish close relationships with their main client firms, particularly those they had supplied with large loans during the war period. So by the mid-1960s six major blocks of industrial groupings appeared: the Mitsubishi Group, the Mitsui Group, the Sumitomo Group, the Foyu Group (Fuji Bank), the DKB (DaiIchi Kangyo) Bank Group, the Sanwa Group, the Tokai Group, and the IBJ (Industrial Bank of Japan) Group.

The first six groups wield great economic power and cover a broad spectrum of economic activities, including the exploitation of natural resources, industrial production, trade, finance, insurance, real estate, transportation and research. Although there are differences in the pattern, nature and strength of the ties among industrial groups, they nevertheless share common features without which a *kigyo keiretsu* could not exist: the cross-holding of shares, the formation of presidential and directorial councils, the intra-group exchange of personnel, including the appointment of retired government officials (*amakodari*), financing through the respective core bank, the performance of a number of corporate functions by the group's general trading company (s), and joint investments in new projects by group companies.²⁷

Another major aspect of *keiretsu* is the pursuit of "one set policy" by which each group tries to have a full set of industries within its ranks. Such investment behaviour resulted in an oligopoly, sometimes referred to as the Japanese form of excessive competition.²⁸ Various groups displayed their full power in entering the nuclear industry and construction of petrochemical plants. It was also through these projects that the trading companies began to play an active role in the post-war development of Japanese industries. (Later on we shall examine the role of *sogo shosha* in the development of the petrochemical industry in Japan.)

The "one set policy", although beneficial by creating a competitive environment,

has nevertheless led to excessive competition in some industries and has prevented Japanese companies operating within these industries from becoming major players in the international scene. The Japanese petrochemical industry is a good example of this excessive competition by which the largest Japanese petrochemical firm, Mitsubishi Petrochemicals ranks only 26th among the major international petrochemical companies.

It is very important at this juncture to point out that the post-war *keiretsu* are not replicas of the pre-war *zaibatsu*, and major differences exist between the two: there are no owner families (as they had all been forced to relinquish their interests in the *zaibatsu* by the Occupation reforms), the stockholding in the new industrial groupings are widely scattered and ownership control is non-existent. Moreover, there are no holding companies and there is no central authority. All that keeps the groups together is a common consensus established by the presidents of the independent giant firms within the presidential or directorial clubs.²⁹

Another important point which must be mentioned here is that a few of the reconstructed general trading companies, together with major city banks, played a major role in the establishment of some of the *keiretsu* in the post-war era.

3.1- The Mitsui Group in the Post-War Period

For various reasons, the re-establishment of the Mitsui Group took longer than that of other groups. The four most important factors were:

With the splitting up of the wartime Teikoku Bank into Mitsui and Daiichi Banks, the former was relegated to 8th position among the large city banks, while the other groups' banks occupied the top five positions in terms of deposits and loans. Therefore, the Bank did not command adequate financial resources to lead the re-consolidation of

the Mitsui Group. The Mitsui Bank was so weak financially (compared to the top five) that it could not even provide Mitsui Bussan with sufficient funds for its reconstruction and the latter had to rely on Fuji Bank for that purpose.

In addition, Mitsui Bussan which under the deconcentration policy had been split up into about 233 companies, was in no position to lead the re-consolidation efforts of the Mitsui Group - as other general trading companies had done for their own groups. In fact it was not until 15 February 1959 that the two competing trading companies, General Bussan Kaisha Ltd and Daiichi, which had emerged out of the re-amalgamation of many splinter firms after the break-up of the old Mitsui Bussan agreed to a merger. So the new trading company of the Mitsui Group, Mitsui Bussan (or Mitsui & Co), was established five years later than its closest rival Mitsubishi Corporation (formerly Shoji). Due to its late start, Mitsui & Co was not able to give the sort of leadership for the consolidation of the Mitsui Group that other general trading companies had provided to their groups.

As mentioned before, the pre-war Mitsui Zaibatsu had a decentralised organisation and provided opportunities for the personal initiatives of its employees. In contrast, Mitsubishi had a rigid organisational set-up with all the initiatives emanating from the Iwasaki Family presidents and top managers.

This loose organisational arrangement of Mitsui was to have far reaching consequences for the re-consolidation of the group after the war. First, during the break up of the zaibatsu under the Occupation reforms, many businesses were divided not along product or business lines, as was in the case of Mitsubishi, but on the basis of the personality of their managers. Second, some former zaibatsu member companies, including major ones like Toshiba, Kanebo Ltd, Ishikawajima Harima Industries, Toyota,

and General Sekiyu (General Oil Company), refused to join the reconstructed Mitsui Group. By contrast, the Mitsubishi Group, as in the pre-war period, developed along lines of much stricter discipline and therefore, soon surpassed all other groups in size and importance. Probably that's why the anecdote, "Mitsui is people, Mitsubishi an organisation",³⁰ is used to compare the two group. Nevertheless, efforts to re-integrate former Mitsui companies in the 'open' Mitsui Group were continued until some results were achieved. In 1973 Toshiba, Oji Paper, Mitsukoshi, and then in 1984, Toyota Motor Co. joined the *Nimoku Kai* (Second Thursday Club), to which the presidents of the 24 most important Mitsui companies belong.³¹

Finally, Mitsui had been strong in mining, and when mining (particularly coal mining) lost importance in the post-war period, Mitsui did not have sufficient funds and planning to enter early and dynamically into the emerging industries [like oil].³²

A measure of the cohesiveness of Japanese industrial groups is the degree of mutual stock-holdings between core companies of the group. As of 1974, the percentage of stock of core companies held within the group was as follows: Mitsubishi (30.6%), Mitsui (17.4%), Sumitomo (27.9%), Fuyo Group (17.4%), DKB (19.2%), and Sanwa Group (16%). The high degree of mutual stockholding within the Mitsubishi and Sumitomo groups is a clear sign of closer intra-group cohesion than Mitsui (or any other group for that matter).

As of 1987, the Mitsui Group consisted of 120 companies, the shares of 87 of which were traded on the Japanese stock exchanges. The group reports for that year, however, indicate that the extended circle of Mitsui companies, including related firms, numbered over 2,000, and that the major companies employed about 250,000 people.³³ Moreover, as early as 1974, the 22 most important Mitsui companies alone achieved a

turnover of US\$ 36 billion, which represented 8.8% of the Japanese GNP for that year.³⁴

3.2- The Overseas Activities of Mitsui Bussan

The Mitsui Group and, in particular Mitsui Bussan, are very active in the creation of joint ventures between member companies as well as between member companies and foreign partners. In fact, although Mitsui Bussan has been the number two *sogo shosha* since the war, in some areas, like number of foreign offices, foreign affiliates, subsidiaries and joint ventures, it has surpassed its rival: Mitsubishi Corporation. Both of these two giant general trading companies, as in the pre-war period, have kept up their fierce competition, expanding their trade, financing, and ventures. One important cause of competition for overseas investments between Mitsui and Mitsubishi has been the struggle to attain the number one ranking position among the top nine *sogo shosha* in Japan.

The attainment of number one general trading company not only brings the prestige associated with such a position but also several other benefits. First, it provides the number one company with publicity and prominence amongst the Japanese business community which in turn will bring more trading opportunities. Second, the company would attract more high calibre graduates who want to work for the top trading firm. Third, the *sogo shosha* which accomplishes such ranking will be able to get more finance at favourable rates from banks and other financial institutions.

The following data may shed some light on the degree of involvement of Mitsui Bussan in overseas ventures in the 1970's. In 1970 Mitsui & Co was participating in 65 major projects to secure raw material supplies for Japan. These included the mining of

iron ore, copper, tin, nickel, coal and salt, petroleum exploration, lumber, and foodstuffs, which required investments to the tune of US\$25 billion.³⁵ In 1977 alone Bussan's net foreign investments were 247 billion yen, and its number of overseas offices and affiliates reached 129 in that year.³⁶ It is worth mentioning however, that not all these overseas ventures have been successful. The faith of the Mitsui & Co's petrochemical joint venture in Iran, as we shall see in later chapters, is a dramatic illustration of the risks involved in overseas ventures by Japanese general trading companies (or any other Japanese company).

Mitsui & Co's greater involvement in overseas investments is not only due to competition with its arch rival: Mitsubishi, for top ranking. Other equally, if not more important factors, such as organisational characteristics and historical developments of the two general trading companies can explain the propensity of Mitsui Bussan for greater involvement in overseas ventures.³⁷

As discussed in earlier sections, Mitsui's corporate culture has long focused its attention on the individual initiatives of "Mitsui persons" as shrewd traders and entrepreneurs. As a result of this organisational set-up, Mitsui employees often cultivate business opportunities inside and outside Japan with relative freedom from the formal boundaries of business tasks and responsibilities assigned to other internal organisations. In its matrix-organisation of product-wide and area-wide profit responsibilities, Mitsui distinctly emphasises the business area-wide profitability and business volume. The Mitsubishi Corporation on the other hand, places its emphasis upon the vertical links of product-wide groups cutting across various geographical areas. Mitsubishi, moreover, has a rigid organisation which de-emphasises individual employees' action beyond what is assigned to the formal organisational unit within the firm. Therefore, it is quite likely

that Mitsui people stationed abroad react more urgently and quickly to the host countries' moves of import substitution by commencing manufacturing operations. The response of Mitsubishi, on the other hand, is quite likely to be to change the product mix to overcome import restrictions by developing countries.

Moreover, compared to the Mitsubishi Group, the Mitsui Group has lacked a strong orientation towards shipbuilding, heavy industrial machinery and equipment. The Group, for the most part (with the exception of the Toray Group who produced synthetic fibres) has concentrated on small to medium sized firms engaged in the production of standard consumer and industrial products. On the other hand, the Mitsubishi Group's strength is based on a few large manufacturers of ships and industrial equipment, particularly the Mitsubishi Heavy Industries.

As a result, the export of manufactures handled by Mitsui were more likely to be singled out as the targets of import substitution moves by the developing countries than those exports handled by Mitsubishi.

When the above factor, coupled with differences in corporate culture, and the fact that, from the very beginning, Mitsui Bussan has acted as the key organiser and creator of the Mitsui industrial group while the Mitsubishi Corporation has been mainly the marketing arm of the Mitsubishi industrial group, is taken into account, it is not surprising that Mitsui & Co has led Mitsubishi and other large trading companies in overseas investments. A substantial part of Bussan's investment overseas is for the development of overseas natural resources for importation into Japan. As dependence of Japan on imported oil is of special interest to us, the involvement of Mitsui Bussan in the oil business and its efforts to develop overseas oil resources will be discussed in the following section.³⁸

3.3- The Involvement of Mitsui Bussan in the Oil Business

As discussed in Chapter 2, the Mitsui Group has never been as strong as the Mitsubishi Group in the oil business. Even in the Pre-World War II period, during which mining was one of the most important businesses of the Mitsui Zaibatsu, it still lagged behind the Mitsubishi. In fact, the latter had entered the oil business in a big way in 1934 by establishing the Mitsubishi Oil Company in association with the Tidewater oil company of U.S.A. Mitsui Zaibatsu, on the other hand, had confined itself to trading in oil products in the inter-war period (see Chapter Two for more details on the oil businesses of the two zaibatsu) and, instead, had concentrated on coal mining.

In the immediate post-war years, the powerful commercial rights in the oil business which had been held by the pre-war Mitsui Bussan were transferred almost intact to the General Sekiyu (General Oil Company) and, therefore, neither Daiichi Bussan nor any of the companies it had annexed had any way of entering the oil business.³⁹ As business was prospering for General Sekiyu, the company felt no inclination to merge with Daiichi Bussan. Even after the grand merger of 1959, mainly because of personal differences between the presidents of General Sekiyu and the then president of Mitsui Bussan, Tetsuzou Mizukami, the former refused to re-join the new Mitsui Bussan.⁴⁰ Moreover, attempts during the 190's for a rapprochement between the two also failed due to General Oil's reluctance.⁴¹ Therefore, the oil business continued as one of the weakest trading areas in Mitsui & Co. In those circumstances, and under the strict official controls on trade and foreign exchange, it was difficult for the Company to expand its oil business, for oil for bonded bunker use and for domestic sales depended greatly on securing stable supply sources and also on expanding them. Many steps were taken to resolve these problems before growth could be realised, and in the interim

Mitsui & Co had no alternative but to act as an agent for other companies.

Meanwhile, in the early 1950s, the Mitsubishi Oil Company re-established its ties with Associated Oil (formerly Tidewater), which had been broken during the Pacific War, and once again became one of the top five oil companies in Japan. In addition, Mitsubishi Corporation also strengthened its oil business and became one of the biggest oil traders in Japan.

As mentioned in Chapter Two, in the 1950s, petroleum was fast replacing coal as the largest source of energy for Japanese industry. Moreover, the modern petrochemical technology which was being rapidly introduced into Japan used naphtha, an oil product, rather than coal as its main feedstock. So coal, upon which the Mitsui Zaibatsu had been built and which was still occupying an important position in Mitsui's turnover in the immediate post-war period was fast losing its market.

Under these circumstances, especially as the Mitsui Group was the first *keiretsu* to establish a modern petrochemical plant in Japan in the 1950s, and as the Group planned to enter the oil industry in a big way, it (Bussan) decided to develop its oil business.

The trade and foreign exchange liberalisation of the late 1950s/early 1960s provided Mitsui Bussan with an ideal chance to improve its oil business. In 1959 and 1960, the Fuel Department with the responsibility for oil trading, worked on finalising the Company's plan for all-out entry into the oil business. The Chiba Plan, as it was known, called for the construction of an oil refinery, a naphtha cracking centre, and facilities for sales of petroleum products on the Chiba Prefecture coast.

The Plan, however, ran into many difficulties. The only part of the plan which was realised on time was the establishment of Mitsui Oil Supply Company Ltd in 1961.

Moreover, Mitsui Bussan with the co-operation of a number of the Mitsui Group firms set-up a joint venture called Kyokuto Petroleum Industries Ltd. with Mobil Oil Corporation in June 1963. The new company, as required by the Petroleum Law of 1962, applied for a licence to construct an oil refinery. But the highly competitive nature of the Japanese oil industry made it extremely difficult to obtain a licence.⁴² And when the government finally granted its approval for the oil refinery in August 1965, Mitsui & Co's original plans were far behind schedule.

Furthermore, the Kyokuto's plans for marketing its oil products had to be revised on the objections by the Toa Nenryo Kogyo. Under the revised plan, Mobil Sekiyu (the Japanese subsidiary of Mobil Oil Corporation) would become the oil sales company authorised by MITI for marketing the products of Kyokuto Petroleum Industries, and the former would then turn over half of these products to Mitsui Bussan. In addition, Bussan and Mobil Sekiyu would each supply Kyokuto Petroleum with half of its crude oil needs. The last arrangement was highly unusual since it was normal practice in a joint venture in the oil refining business for a foreign partner with 50% capital participation to have 100% control over the supply of crude oil.⁴³ This arrangement, nevertheless, forced Mitsui & Co to look for stable supplies of crude oil from overseas.

Although Bussan, through the Chiba Plan, succeeded in entering the oil refining business, it was forced to abandon its plans for marketing oil products in Japan as the MITI refused to grant the Company the authorization to become an oil sales company in the face of opposition from established firms in the oil business. Without such official recognition, it was impossible for Bussan to participate effectively in the decision making process in the industry, or surpass companies that were already active in the oil industry.

In later years Mitsui Bussan participated in oil development projects overseas to

make up for its weakness in the oil industry, and succeeded in establishing an overall system of oil production, refining and sales. But the company has "never really overcome the handicap of having begun late in the oil business".⁴⁴ Moreover, "there has probably been nothing more painful to Mitsui & Co. than its late decision to enter the oil business".⁴⁵

It was due to this weakness in the oil business as compared to other large *sogo shosha* that persuaded Mitsui Bussan to look for opportunities for the exploitation of overseas oil resources with eagerness. Such an opportunity arrived in 1968 when the Iranian government invited Japanese companies to bid for the exploration and development of the Lorestan oil field, the "last unexplored oilfield in the Middle East not tied to any concessions to major Western oil companies"⁴⁶ in western Iran. Mitsui Bussan enthusiastically entered the bidding for the oilfield. However, the acceptance of a bid for the oilfield was conditional on Bussan agreeing to enter into a joint venture with Iran's National Petrochemical Company to build a large petrochemical complex in southwestern Iran. Mitsui Bussan, anxious to make up for its weakness in the oil business, accepted the condition. And so Mitsui & Co.'s involvement in Iran Japan Petrochemical Company, a project which dragged on for nearly twenty years without ever being completed, and a project which proved to be disastrous both for the Company and Iran, began. (The entry of Mitsui & Co.'s into oil exploration and its involvement in the Iran petrochemical project will be the subject of later chapters.)

4.0-The Functions of Sogo Shosha and Their Role in the Development of the Japanese Petrochemical Industry and Overseas Natural Resources

In this section, the role of the general trading companies, particularly that of Mitsui Bussan, in the development of the Japanese petrochemical industry and in

overseas investments with emphasis on natural resources will be discussed. As a matter of fact, any analysis of Japanese foreign investment would be incomplete without mentioning the commanding position the trading companies have in overseas investments. The top six *sogo shosha* (Mitsui Bussan, Mitsubishi, C.Itoh & Co, Sumitomo Corporation, and Nissho-Iwai) constantly appear in the list of the top ten Japanese foreign investors, with the first two leading the list. Furthermore, the nine *sogo shosha* (the above six plus Tomen, Kanematsu Goshu, and Nichimen Jitsugo) are among the top twenty five Japanese investors.

In this section, the terms *sogo shosha* and general trading companies will be used interchangeably, and refer to the top nine Japanese general trading companies mentioned above. In order to have a better understanding of their activities, it would be appropriate first to discuss the business and functions of the *sogo shosha*.

4.1- The Business of the Sogo Shosha

The business of the *sogo shosha* can best be defined as intermediation in space and time, for those two factors create the uncertainties and risks associated with supply and demand.⁴⁷

The larger the geographical space that economic activities span, the greater the barriers to communications and transportation, and the greater the need for warehousing. Similarly the longer it takes to complete an economic transaction, the greater the risks involved, mainly in the form of unforeseen changes and gaps in supply and demand conditions.⁴⁸ Trading companies, the willing bearers of, and capitalizers on, these uncertainties and risks, perform three "basic" (or primary), and three "extended" (or auxiliary) functions. The three basic functions are: trading (transaction intermediation),

financial intermediation (quasi-banking), and information gathering. And the three extended functions are: technology transfer, resource development, and organising.⁴⁹

It is important to emphasize that the above mentioned functions are closely interrelated and cannot be easily separated. However, for the ease of explanation, they are divided into such categories.

4.1.1- The Basic Functions

4.1.1.1- Trading

Trading is the core business and the most basic function of the trading companies, who stand between the suppliers and users of commodities and facilitate the flow of commerce between the two entities at home and abroad. An important point about the *sogo shosha* is that about 80% of their total transactions consist of dealing in raw materials and producers goods.⁵⁰ The reason why the general trading companies deal in raw materials and producer's goods mainly is because their trading commission is very low, about 2% or less of their total transactions. Therefore, they need to trade in large volume type of commodities, like raw materials (grains, oil etc), and intermediate goods like metals or petrochemicals.

It is very important at this juncture to point out that although the *sogo shosha* own hundreds of small subsidiaries and large joint ventures in Japan and all over the world which are engaged in resource development, manufacturing and processing, construction, financing, leasing, and subcontracting, they are all run for one primary purpose: to support the core business of buying and selling, and to generate new businesses.⁵¹

4.1.1.2- Financial Intermediation

The second basic function of the *sogo shosha* is financing. The financing activities of the trading companies can be classified in two ways:

One, used by Mitsui & Co, breaks down the financing activity into "trade credits" and "loans and guarantees". The trade credit is extended for the purpose of increasing the trade volume by which credit is given to both sellers and buyers of goods and services. The loans and guarantees are mainly for investment purposes and around 80% of the total are extended to small and medium sized companies.⁵²

Yet another classification breaks down the financial intermediation of the trading companies into short-to medium term loans and equity capital.⁵³ The former is used in connection with the *sogo shosha* trading activities, whereas the latter type is used for investment in the development of natural resources, manufacturing, and the opening of overseas branches.

The equity participation by a trading company in a venture is not for the purpose of investment and receiving dividends per se, but rather as a conduit for trading activities. As long as an investment project leads to intermediating activities that generate commissions, the trading companies are content to accept a low rate of return on the investment itself. Indeed, they earn only a very low rate of return, ranging from 1.2 to 3.1% on their investments, hardly an attractive rate by any investment standard.⁵⁴

4.1.1.3- Information Gathering

For the trading companies, speedy and reliable information is important not only to develop new business opportunities, but also to build a good relationship with the customers. There are two types of information which the *sogo shosha* are interested in:

The first type of information is related to trade and commercial activities, and the second type is information on the general economic, political, and social environment to support the decision making of the management.

4.1.2- Extended or Auxiliary Functions

4.1.2.1- Technology Transfer

The *sogo shosha* not only trade in commodities, but also in non-commodities or intangibles like technologies or information. Through their worldwide networks, the trading companies introduce superior technology to Japan, and Japanese technology to foreign countries. By introducing technology to Japan, the general trading companies establish new industries, and help upgrade Japan's industrial structure. On the other hand, the *sogo shosha*, transfer technology which will contribute to the development of Lesser Developed Countries (L.D.C.'s) labour intensive (textiles, fibres), and heavy (iron and petrochemicals) industries.⁵⁵ At the same time, by the transfer of such technologies to the developing countries, the trading companies help to upgrade the Japanese industrial structure which can concentrate on higher added value and more knowledge-intensive industries, as well as helping to clean the environment in Japan.

4.1.2.2- Resource Development

One of the most important extended functions of the *sogo shosha* overseas is their role in resource development. As mentioned in section 4.1.1.1, around 80% of the trading companies' transactions consist of dealing in raw materials. This, combined with the fact that Japan's import percentage rate for many raw materials is quite high; 99.8% for oil, coal 83.4%, iron ore 99.6%, bauxite 100%, and cotton 100%,⁵⁶ makes a very strong case

for the trading companies to want to invest in overseas natural resources.

The *sogo shosha* engage in large investments in the development of overseas natural resources on their own or in co-operation with domestic or foreign companies. Their resource development projects cover the full range of basic materials, like iron ore, coal, non-ferrous metals such as copper, zinc ore, uranium, bauxite, oil, LNG, wood, salts, agricultural and marine products of all types all over the world.

One important point is that it was a policy of the Japanese businesses, with the active support of the government, to import resources in raw form and then process it in Japan. There were two reasons for this policy. First as Japan was very short of foreign currency during the 1950s and 1960s, it was much cheaper for her to import the low value raw materials rather than the processed ones and, hence, make big savings of scarce foreign exchange. This policy had the added bonus of encouraging the expansion of heavy and chemical industries: the prime target industries of successive Japanese governments' economic plans in that period.

Until the mid-1960s Japan relied mainly on the spot markets for the purchase of raw materials. However, when the dependence on overseas resources reached a critical point, the inadequacy of spot markets became clear, and Japanese business interests, with the full support of the government, started to search for investment opportunities in overseas resources. So from the mid-1960s onward there was a dramatic increase in Japan's participation in overseas resource development and import (D & I) projects, both those involving loans only and equity participation also. As time went by, the number and scale of overseas projects increased, so did the capital requirements and the size of Japanese participation.⁵⁷ However, the big resource processors in Japan were not interested in having a direct role in overseas projects. They lacked sufficient capital and

experienced personnel to deal with foreign governments and companies. They preferred to have the general trading companies as their partners or even as the sole Japanese representatives on overseas projects.

As a matter of fact, the *sogo shosha* with their extensive networks of offices and branches worldwide which gave them access to up-to-date information regarding the availability of natural resources all over the world, capital markets: domestic as well as international, were in a position to act as the overseas arms of the Japanese raw material processors by investing in the development of resources that the latter required.

4.1.2.3- Organising

The third extended or auxiliary function of the *sogo shosha* is "organising". An observer of the general trading companies states: "it (organising) is the very function that will determine the very *raison d'être* of the general trading companies in the future".⁵⁸ However, the organising function is not one function, but the combination of all the functions discussed above. The *sogo shosha* put together all of their functions to organise and co-ordinate the different types of business activities such as manufacturing, construction, engineering, and resource development in international joint ventures. Indeed, the reason that the *sogo shosha* can undertake international joint ventures is their ability to provide many functions together.

Throughout the 1960s and 70s, the number, scale and complexity of overseas resource development projects in which the Japanese participated increased. Therefore the necessity emerged to co-ordinate the activities of Japanese participants, provide adequate information, and negotiate with the Japanese government, host governments, and foreign firms. Only the general trading companies with their global information

gathering capabilities, commercial networks, their personnel, and above all their ability as organisers were in a position to provide these services.⁵⁹ This led them to play an increasingly central role as the forerunners of the Japanese international investors.

4.2- The Role of Sogo Shosha in the Development of the Japanese Petrochemical Industry

In the pre-war period and up to the mid-1950s, Japan relied mainly upon coal, carbide, and fermentation processes as sources of materials for organic chemicals. The manufacture of high-octane gasoline in the United States during the war for use in aeroplanes, however, revolutionised the post-war petrochemical industry by utilising waste gases from the cracking process.⁶⁰ Moreover, as immediately before and during the war the Japanese industry had concentrated all its resources on production, it therefore had few resources for innovation and technological development. In particular, Japanese technology in petroleum refining and petrochemical production was far behind that of America and Germany in the war-time and immediate post-war years.⁶¹

In order to make these industries, in the shortest possible time, competitive with their counterparts in the advanced Western nations, the Diet passed a law in 1954 on the promotion of the petroleum and petrochemical industries. MITI was given the responsibility for drafting detailed plans and establishing standards for these two industries.⁶² To achieve these objectives, MITI worked out a plan for importing technology, allocating foreign exchange, and offering loans, tax benefits, and tariff exemptions to industrialists. Under such favourable conditions, four major groups were established and began to build naphtha cracking centres in 1957.

The first integrated plan to start operating was that of Mitsui Petrochemical, formed by Mitsui Chemical, Bank, Mining, Daiichi Bussan, Toyo Rayon, Toyo Koatsu,

and several other Mitsui companies, together with Koa Oil. Located at Iwakuni, a former military oil depot, the complex began operations in 1958, with Koa Oil supplying naphtha, and Bussan serving as distributor.⁶³ The other three petrochemical centres established under phase one of the industry's expansion were by Mitsubishi Petrochemical, Sumitomo Petrochemical, and Nippon oil on the former government oil depot sites in Yokkaichi, Nihama, and Kawasaki respectively. In later phases, and again under the guidance of MITI, more centres were added in Chiba (the Mitsui complex discussed in the previous section), Sakai, Mizushima, Tokuyama and a few other places where several large oil refineries and petrochemical plants joined and formed what the Japanese call *kombinato*, petrochemical complexes.⁶⁴

In the earlier phases of the development of the industry, almost all the required technology had to be imported, and the general trading companies naturally played important roles in this transfer of technology. First, their opinions on the corporate strategy as to what product lines should be emphasised, were usually adopted because of their long experience in marketing various petrochemical goods. Second, in introducing foreign technologies, the information gathered by their overseas networks provided them with the critical knowledge about new technologies and processes being developed in other advanced countries.⁶⁵

The *sogo shosha* played other equally important roles in the development of the Japanese petrochemical industry. For example, in phase one of the development, in connection with the founding of the naphtha centres, Mitsubishi Shoji invested in and sold the products of Mitsubishi Yuka (Chemicals); and Daiichi Bussan and Sumitomo Shoji were put in charge of marketing the products of Mitsui Petrochemical and Sumitomo Kakagu respectively. Marubeni Iida was one of the investors for Showa Yuka,

which was established mainly by Showa Denko of the Fuji Bank Group.⁶⁶

Trading companies also served as mediators on several fronts. In the first place, one they acted as organisers of intra-*keiretsu* syndicates for investment in petrochemical companies. Secondly, they acted as intermediaries in the development of suitable industrial sites and the formation of *Kombinatos* to reduce the costs of such developments. And thirdly, they acted as mediators between foreign companies who possessed the technology or processes required by Japanese petrochemical companies. The best example of the role of trading companies as mediators is the formulation and implementation of the Chiba Plan by Mitsui Bussan. As discussed before, Bussan was the instigator in the development of the industrial site in the Chiba Prefecture. On this site a huge tract of land was developed for a petrochemical complex consisting of around thirty Mitsui companies involved in the integrated operation with Mitsui Petrochemical at its heart, and a refinery for Kyokuto oil.⁶⁷

The other contribution of the general trading companies to the development of the petrochemical industry was their involvement, as traders, in all stages of the industry, from procurement of raw materials to the sales of final products.

Production of petrochemicals involves a long chain of processes to reach the end products, and demand for intermediate products is six times as large as that for final products.⁶⁸ *Sogo shosha* involved themselves precisely because of this big intermediate demand, as well as the huge trading opportunities created by the long chain of processes needed to reach the end product in this industry.⁶⁹

Finally, the *sogo shosha* contributed to the development of the Japanese petrochemical industry by helping it to ride the domestic business cycles by expanding domestic demand during boom times and increasing their exports during the recessions.

This allowed for continuous operations and achievement of economies of scale which are vital for the industry's profitability and competitiveness.⁷⁰

4.3- Sogo Shosha's Investment in Overseas Natural Resources

As stated before, the *sogo shosha*'s business can be defined as intermediation in space and time, for these two factors create the countless uncertainties and risks associated with supply and demand. Trading is their core business and all other activities (like manufacturing and resource development) only have a supporting role, i.e. to facilitate, expand, and create new opportunities for trading. In general, the trading companies have two roles: export agents and procurement agents. The former causes them to participate in labour-intensive manufacturing investments overseas on a limited scale, while the other, the procurement-agent role, entices them to invest in extractive ventures on a relatively large scale.⁷¹

It is worth emphasising again at this juncture that the general trading companies do not produce any goods themselves, but specialise in intermediating between buyers and sellers of goods. Space and time are the two dimensions in which they operate, and they profit from the movement of goods and services, and trade intermediation rather than foreign investment is their major source of income. As far as the trading companies are concerned, as long as an investment project leads to intermediating activities that generate commissions, they are apparently content to accept a low rate of return on the investment itself.⁷² The role of the *sogo shosha* as financial intermediators can perhaps be likened to the British merchant banks and the German universal banks. But the important difference is that the Japanese trading companies are willing to accept an extremely low rate of return on their financial investment in overseas joint ventures in

exchange for other business transactions, like sales of plants and machinery, import of raw materials or intermediate goods produced by the venture to Japan or export to third countries, sales of the processed products in domestic as well as foreign markets, which enable them to earn commissions. The financing services (loans, equity investments) of the trading companies can be likened to what in marketing jargon is called a "loss leader", which is used to attract customers to other items the store sells.⁷³ In other words, they use the "cross-subsidy" or "transfer pricing" methods to generate trading opportunities which is the core of their business. Indeed, there is evidence of such behaviour in a case which is of particular interest to us, namely the IJPC, the joint venture between the Mitsui and the Iranian government. According to a Mitsui publication, the petrochemical joint venture was classified as sales of plants and machinery rather than as an investment.⁷⁴

There is one further difference between the motives of the Japanese trading companies and the Western companies (mining and oil) for investment in overseas natural resources. In this regard Professor Kiyoshi Kojima states that Japan's pattern of resource development imports, in contrast to the U.S and European pattern (independent development aiming at earnings from upstream and downstream integration), meets Japan's national interest as well. It satisfies the resource nationalism of the host country and benefits from the technologies and capital of Western mining and engineering concerns. It also guarantees a large Japanese market on a long term basis which makes possible huge resource development projects and large scale transactions, both of which are good business opportunities for the *sogo shosha*.⁷⁵

As discussed in the previous section, it was in the mid-1960's that the *sogo shosha* became involved in the development of overseas natural resources. Ever since then, the

general trading companies have aimed at becoming global natural resource development project organisers. In the beginning, the trading companies only got involved at the invitation of the Japanese processors. However, as they gained experience and confidence, they started to take the initiative themselves and now play a central role through their organising function.

A measure of the trading companies' efforts is the size of their direct foreign investment in resource development and its weight in Japan's total direct foreign investment. For example, during the financial year (FY) 1975 Mitsui & Co invested 33.6% of its direct investment abroad (both equity investment and loan) or 55% of its foreign equity investment (excluding loans) in natural resource development.⁷⁶ The other top eight trading companies have not invested as heavily in absolute value and percentage share, but their investments also have been sizeable.⁷⁷ As a matter of fact, Mitsui has always been a leader in overseas development projects. For example, the first opportunity for the general trading companies to participate in a huge overseas resource development-import project came in 1966, when Australian mining and commercial interests extended an invitation to Japanese steel manufacturers to have a 10% financial participation in a \$252 million iron ore development at Mount-Newton in northwestern Australia. The Japanese steel makers recommended two *sogo shosha*: Mitsui & Co, and C.Itoh & Co, rather than themselves, as participants in the project. The project has turned out to be the biggest source of iron ore for the Japanese steel industry, which in turn has been the largest consumer of the project's production.⁷⁸

Finally, Table 5.1 gives an indication of the role of the trading companies in Japan's foreign investment. As of 31 March 1986, the total value of the Japanese foreign investment was Y15,233.6 billion, of which the share of the general trading companies

was Y1,908,026 million (both equity investment and loans), or almost 13% of the total.

Table 5.1- Overseas Investments and Loans of Nine Major Trading Companies (As of 31 March 1986). Unit: Million Yen

	Investment	Loans	Total
MITSUI	206,081	124,741	330,822
MITSUBISHI	203,281	323,838	527,119
C.ITOH	138,175	51,408	189,583
MARUBENI	232,534	110,240	342,774
SUMITOMO	98,294	43,294	142,131
NISSHO-IWAI	89,973	24,237	114,210
TOMEN	84,525	10,156	94,681
KANEMATSU	40,100	59,435	99,535
NICHIMEN	39,117	28,054	67,171
Total	1,132,080	775,946	1,908,026

Note: Total Japanese Direct Investment: 15,233.6 Billion Yen

(As of 31 March 1986).

Source: Mitsui & Co (undated).

5.0- Conclusion

In this chapter we looked at the establishment and evolution of the Mitsui Group, and in particular Mitsui Bussan. We learnt that the original business was set up in the early seventeenth century and the House of Mitsui made steady but strong progress during the Tokugawa and Meiji periods mainly because of the initiatives of its managers and close relations with the government. Mitsui, moreover, by setting up various manufacturing subsidiaries, importation of raw materials and exports of manufactured goods, became heavily involved in the industrialisation of Japan in the late 19th/early 20th Century. A major difference, however, between Mitsui and other emerging zaibatsu like Mitsubishi was that the former concentrated on mining and general goods as its main line of business while the latter relied on the promotion of heavy industry for expansion. This difference of emphasis still persists today.

Three other major differences separate the two giant groups. First, in the case of Mitsui, Mitsui Bussan was instrumental in the establishment and expansion of the Mitsui Zaibatsu and exerted considerable influence over the various Zaibatsu enterprises. While in the case of Mitsubishi, Mitsubishi Shoji was established mainly as the trading arm of the Zaibatsu, in charge of the promotion of goods produced by the latter's numerous zaibatsu enterprises especially the heavy industrial goods. Second, the Mitsui Group has had from the very beginning (17th Century) a decentralised organisation with considerable leeway for personal initiatives of its employees. Although this organisational set-up has enabled the Group to respond quickly to business opportunities worldwide, especially in the field of foreign investment, it has nevertheless impeded the greater intra-group cohesion enjoyed by other Japanese industrial groupings. This was a particularly serious problem in the post-Occupation efforts for re-consolidation of the

pre-war Mitsui Bussan and other former Mitsui Zaibatsu enterprises.

Mitsubishi on the other hand, has had a strong centralised organisation with authority for decision making concentrated in the hands of top management, and as a result, managed to re-unite its numerous companies into the new group with relative ease in the post-war years.

The other major dissimilarity between the two groups has been the historical weakness of the Mitsui Group in the oil business as compared to the Mitsubishi Group. In the inter-war years, as we saw in Chapter Two, coal was the most important source of energy and raw material in Japan and hence Mitsui quite understandably, concentrated on coal mining and paid little attention to oil whose contribution to the country's energy needs was less than 10%. The Mitsubishi Zaibatsu, in contrast, took the oil business very seriously and its subsidiary, Mitsubishi Oil Company, became one of the largest oil companies in pre-war Japan. With the introduction of modern technology which was oil based and the relative decline of petroleum prices compared to coal in post-war years, however, the former soon passed the latter as the most important sources of energy as well as the feedstock for the fast expanding Japanese petrochemical industry. The Mitsui Group, although belatedly, perceived this change in trend and tried to enter the oil business, but several obstacles thwarted the Group's attempts to become a major player in that industry. These barriers were: (a) the refusal of General Sekiyu to re-join the Group in the 1950's; (b) the Foreign Exchange and Trade Laws which greatly hampered the entrance of new companies into the oil business; and (c) the objections of established oil companies who were not prepared to share the fast growing and competitive Japanese petroleum market with new entrants.

The Mitsui Group, and particularly Mitsui Bussan, which once again had assumed

a central position in the Group, "regretted" its weak position in the oil business compared to other industrial groupings especially Mitsubishi whose oil company had once again become a major player in the Japanese oil industry. To overcome this shortcoming, Mitsui Bussan made strenuous efforts, particularly in the development of overseas oil resources. One result of this oil policy was that Mitsui & Co became one of the main contenders for the development the of Lorestan oilfield in Iran which was offered to Japanese companies for exploration in the late 1960s. The involvement of Mitsui Bussan in the Lorestan oilfield and the petrochemical joint venture, whose construction was apparently a condition for the acceptance of the bid, will be the subject of Chapter Seven.

Notes

1. In the Japanese language "Bussan" means "products". Outside Japan, the Company is known as 'Mitsui & Co.' In Japan itself it is called 'Mitsui Bussan' or simply 'Bussan'. Throughout this study, these three names will be used interchangeably and refer to the general trading company of the Mitsui Group.

2. In fact, there were five Japanese companies participating in the joint venture. However, Mitsui Bussan was the biggest and the most influential of all in the management and decision making process of the enterprise. Hence, only the management and organisational characteristics of Mitsui Bussan will be discussed.

3. See Chapter Three for the definition of the term.

4. This section is based on Roberts, John, J., " Mitsui: Three Centuries of Japanese Business", Weatherhill, Tokyo, 1973.

5. Yonekawa, Shin'ichi, " General Trading Companies: A Comparative and Historical Study", United Nations University Press, (1990), p.23.

6. Inoue later on became Finance Minister and then Foreign Minister, and was one of the most powerful politicians in Meiji and Taisho Periods. Nevertheless he continued his association with the House of Mitsui and was their most trusted and influential adviser.

7. Roberts (1973), p.108.

8. Yonekawa (1990), pp.50-51. See *ibid*, pp.89-91 for the author's theory on why Mitsui Bussan developed into a general trading company in late 19th/early 20th centuries. Moreover, see *ibid*, p.213, note 67, for reference to Nakagawa Keiichiro and Morikawa Hidemasa theories on the reasons for the evolution of some of the Japanese trading companies, particularly Mitsui Bussan, into general trading companies.

9. Yonekawa (1990), p.66.

10. *Ibid*.

11. See *ibid*, pp.67-69 for details of the penetration of the Chinese market by Mitsui Bussan in inter-war period.

12. Yonekawa (1990), p.71.

13. *Ibid*, p.73.

14.Hirschmeier, J., and Yui, T., " The Development of Japanese Business: 1600-1980", George Allen & Unwin Ltd, Second Edition (1981), p.228.

15.Yonekawa (1990), p.176.

16.Hirschmeier (1981), p223-224.

17.Ibid, p.258.

18.Ibid p.258-9. However, Roberts (1973) points out that the Mitsui family only agreed to these changes to solve the financial difficulties that they and their zaibatsu were facing.

19.Ibid, p.259.

20.Ibid.

21.Yonekawa (1990), p.117.

22.Mitsui, " The 100 Year History of Mitsui & Co Ltd: 1876-1976", Mitsui & Co Ltd (1977), p.1.

23.Eli, Max, " Japan Inc: Global Strategies of Japanese Trading Corporations", McGraw-Hill Book Company (1990), p.4.

24.Ibid, p.5.

25.Hirschmeier (1981), p.332.

26.The Daiichi Bank later on merged with Kangyo to form Japan's, and in fact the world's largest bank.

27.Eli (1990), p.6.

28.Miyazaki, Giichi," Sengo Nihon no Keizai Kiko (Economic Organisations in Post-War Japan", Tokyo, Shinhyoron, 1966, pp.48-55, 72-86. Quoted in Yonekawa (1990), p.132.

29.Hirschmeier (1981), p.333.

30.Eli (1990), p.24.

31.Ibid.

32.Hirschmeier (1981), p.334.

33.Eli (1990), p.24.

34.Ibid.

35.Hirschmeier (1981), p.343.

36.Ibid.

37.The following discussion is based on Tsurumi, Yoshi, "Japanese Are Coming: A Multinational Interaction of Firms and Politics", Ballinger Publishing Company, (1976), pp.148-150.

38.We have already discussed the dependence of Japan on overseas sources of oil in Chapter Two.

39.The following discussion is based on Mitsui (1977), pp.221-224.

40.Misato Yasunobu, " The Iran Petrochemical Project: The Suffering of Mitsui Bussan", Nihon Keizai Shinbunsha, Tokyo, 1981, p.60.

41.Ibid.

42.See Chapter Two for the details of the Petroleum Industry Law of 1962 and the structure of the Japanese oil industry after the war.

43.Mitsui (1977), p.223. See Chapter Two for the relationship between Japanese oil companies and Major international petroleum firms.

44.Ibid, p.224.

45.Ibid.

46.Takahashi, K., in Sugihara, K. and Allan, J.A., "The Iran-Japan Petrochemical Project : A Complex Issue", Routledge (1993), p.88.

47.Kojima, K. and Ozawa, T., "Japan's General Trading Companies: Merchants of Economic Development", OECD, Paris, 1984, p16.

48.Ibid.

49.Mitsui & Co, "The Activities and Functions of Japanese Trading Firms", Corporate Research Department, Information and Research Division, Mitsui & Co. Ltd., (undated), p7.

50.Ibid, p8.

51.Young, Alexander K., "The Sogo Shosha: Japan's Multinational Trading Companies", Charles E. Tuttle Company, Inc., Tokyo, 1979. p12.

52.Mitsui & Co (undated), p10.

53.Kojima and Ozawa (1984), op cit, p24.

54.Ibid.

55.Mitsui & Co (undated), p14.

56.Ibid, p13.

57. See Chapter Three for different phases of Japanese foreign investments in the post-war period.

58. Ibid, p15.

59. Young (1979), p151.

60. Roberts (1973), p.481.

61. Hirschmeier (1981), p.305.

62. Ibid.

63. Roberts (1973), p.481.

64. Hirschmeier (1981), p.305.

65. See Yonekawa (1990), pp.136-137 for details of the crucial advice provided by the general trading companies to the Japanese petrochemical industry on the importation of appropriate technology.

66. Ibid.

67. Roberts (1973), p.481. Other non-Mitsui firms were also located on this site. These included Maruzen Oil, Idemitsu Oil, Nippon Steel, Tokyo Electric Power, Kawasaki Steel, and Asahi Glass.

68. Yonekawa, p.144.

69. Ibid. As discussed earlier, general trading companies operate on very low commission basis, and they try to compensate for this by increasing the trade volume. The petrochemical industry with its huge volume of trading in raw materials, and intermediate and final products offers the sogo shosha the best opportunity for increasing their trade volume.

70. Yonekawa, pp.144-147.

71. Ozawa, T., "Multinationalism, Japanese Style: The Political Economy of Outward Dependency", Princeton University Press, 1979, p.115.

72. Kojima and Ozawa (1984), op cit, p.24.

73. Ibid, p.25.

74. Mitsui (1977), op cit, p.249.

75. Kojima, Kiyoshi, " Nihon noshigeu hosho to kaigai toshi", "Natural Resource Guarantees for Japan and Japan's Overseas Investments", Sekai Keizai hoyoron, April 1977, pp4-19.

76.Mitsui & Co, "Nihon keizai ni okero shosha no yakumari: geno to tenbo", "The Role of Trading Companies in the Japanese Economy: Current State and Future Prospects", Mitsui & Co Ltd, Tokyo, 1976 , p18.

77.Young, (1977), pp.154-155.

78.Young, (1979), pp.152-153.

CHAPTER SIX

THE HISTORY OF NIOC, AND THE IRANIAN MANAGEMENT STYLE

1.0- Introduction

This chapter has two aims. First, to trace the historical development of the Iranian management style and second, to discuss the establishment, managerial and organisational aspects of the National Iranian Oil Company (NIOC). The reason for discussing the organisational characteristics of NIOC is that it was the first large scale and capital intensive company to be established in Iran and the first one to utilise modern managerial and organisational methods. Moreover, NIOC transferred most of its managerial and organisational characteristics as well as some of its management and technical personnel to its subsidiary National Petrochemical Company (NPC), the Iranian partner in the petrochemical joint venture with Mitsui Bussan. Furthermore, as more information is available on the organisational characteristics of NIOC than NPC, a more detailed analysis can be presented.

2.0- The Development of Iranian Management and Organisation

2.1- The Inter-War Period

As discussed in Chapter Four, in the inter-war years, due to the weakness of domestic private capital and lack of foreign investment (apart from AIOC), the state assumed the leading role in Iran's industrialisation by establishing small scale manufacturing plants in the country. Also some factories producing light consumer goods were set up by wealthy bazaar merchants. As a result, the Iranian management style was from the very beginning influenced by bureaucratic and mercantilistic behaviour. This situation caused the managers of these enterprises to be more concerned with achieving

state objectives and providing the bazaar merchants with goods to sell in the heavily protected domestic market than with efficient operations and the long-term development of their respective organisations. In fact, none of these firms managed to develop their own technology or management skills and remained totally dependent on foreign companies and personnel for such inputs.

The under-development of indigenous technology and management talent was compounded by AIOC: the largest company active in Iran (in terms of employment, capital, and output) at the time. The Company, as we saw in Chapter Four, refused to integrate with the domestic economy or employ Iranians in sufficient numbers in managerial or technical jobs. AIOC practised a very rigid and hierarchical style of British management and did not allow any participation in the decision making process by the few Iranians who had relatively senior positions in the company.

Moreover, the newly established higher education system did not offer any courses in management or business studies. One can therefore infer that no distinct Iranian management method worthy of name existed in Iran in the inter-war period and in fact in the immediate post-war years.

2.2- The 1950s to 1970s

In the 1950s several developments took place which had implications for Iranian management. First, immediately after the oil nationalisation in 1951, the National Iranian Oil Company was established to take over the activities of AIOC. The board members of NIOC and its top management had all been educated at British universities and had worked for the now defunct AIOC in various capacities. Therefore, they adopted the British style of management and organisation for the running of the new company. This

was probably the first time that an Iranian company had consciously employed the management methods of a foreign company or country for its organisation.

Second, after the 1953 coup, the Iranian regime which had until then been pro-British adopted a pro-American stance. This had two repercussions for Iranian management. For one, many American companies started to establish joint ventures with Iranian partners in many sectors of the economy like oil, petrochemicals, automobiles, and other consumer goods. As a result, by the 1970s, the United States had become the largest foreign investor in Iran in terms of number of joint ventures (45) and total value of investments (see Tables 3.17 and 3.18).

Closer links with the United States also provided opportunities for the Iranians to continue their education at American universities instead of British and other European ones.

Third, the University of Tehran with the co-operation of the University of Southern California, established the Institute of Administrative Science in 1954 to train managers for both private and public sectors. At this institute, which was the first of its kind in Iran, a variety of courses including accounting, public and business administration were taught by American lecturers.

The combination of the above three factors facilitated the wide adaptation of American management style by Iranian managers both in the public and private sectors throughout the 1960s and much of the 1970s.

Finally, after the 1954 Consortium Agreement, Iran's oil revenues tripled. This enabled the government to initiate ambitious development plans and take the leading role in the country's industrialisation. Many joint ventures were established with American, British, German, French, and later with Japanese companies in heavy and

light consumer goods industries. These joint ventures, naturally, adopted the management practices prevalent in the home countries of the foreign partners. In the post-war years, the managerial and organisational facets of many Western industrialised countries were imported into Iran with the American method being the dominant one.

However, the situation began to change from the early 1970s onwards as Japanese companies became actively involved in establishing joint ventures, particularly in manufacturing, with Iranian partners. Although the Japanese partners usually had a minority interest, due to three main factors, they exerted almost complete influence over the management of these joint ventures. First, although Iran did not allow foreign investors 100% ownership of companies, on the other hand it did not impose compulsory export and indigenous elements ratio, or localisation of personnel at any level.¹ Second, the Iranian government in fact encouraged the employment of foreign manpower in order to cope with a shortage of managers, engineers, and technicians. Third, Iranian partners in Japanese joint ventures generally liked to employ Japanese factory managers, engineers and technicians as the cost of their employment was cheaper than Iranians in consideration of their experience and skill. They often commissioned factory and production management to the Japanese so that their initiative and influence in management, in particular production management, was by far greater than their minority holdings suggested.²

Due to better management, Japanese manufacturing joint ventures (13 in all) became very successful in Iran: so much so that they surpassed their American and European rivals both in terms of market share and quality of their products.³ However, because of several factors, Japanese management practices were not widely diffused throughout Iranian manufacturing industries. First, Japanese companies were newcomers

in Iran (early 1970s) and, therefore, other Iranian manufacturing companies had little time to observe their operations and emulate their methods before the 1979 revolution forced all of the Japanese partners to pull out of Iran.

Second, very few Iranians chose to study in Japan as the majority of them preferred to be educated at American and European educational establishments. As a result, there were very few Iranian graduates who had either studied or observed Japanese management methods and organisations.

Third, Iranian business or commercial schools which had grown in numbers in the 1960s and 1970s, had links with American and European universities which supplied the former with lecturers as well as study materials. Hence, the dominance of Western, particularly American management theories, over the training of Iranian managers was continued right up to the revolution. (This dominance is still present today).

Fourth, quite logically, the Japanese joint ventures, with two exceptions, were not prepared to share their most valuable assets, i.e. their superior management and production techniques with their rivals in the Iranian market. In one case, Pars Toshiba Lamp Company; a joint venture between the Toshiba Electric Company and Iranian interests, extended its managerial and technical assistance to its only rival, an Irano-Dutch company, to enable it to increase its production so as to stave off government threats to open up the heavily protected market to imports to satisfy the rapidly rising demand for electric bulbs.⁴

In another instance, due to the poor performance of the Ghazvin Glass Company, the American partner withdrew from the joint venture. The main factors behind the failure of the joint venture were mis-management by the American partner and the supply of outdated technology. The Iranian partner asked the Nippon Sheet Glass Co.

for technical assistance. The technical aid was so effective that the company's production rose sharply. The increase in production and rising domestic demand for glass persuaded Nippon Glass to take a 26.4% interest in the company. As a result of Japanese participation, Ghazvin Glass became the biggest and most profitable glass manufacturing company in Iran.⁵

Although almost all Japanese manufacturing joint ventures were very successful in their operations in Iran, there is no evidence to suggest that any serious efforts were made, either by Iranian managers or business schools, to learn about Japanese management practices.

2.3- The Pattern of Iranian Management in the 1950-1970 Period

In the preceding pages it was stated that in the 1950-70 period, British, American, and, to a lesser extent Japanese management methods were imported into Iran with the second one exerting the largest influence. However, it would be a great mistake to assume that these styles of management were adopted without any inputs by the Iranian managers themselves. In fact, the peculiar pattern of Iran's industrialisation, namely, the extensive intervention of state and the role of bazaar merchants in that process, were to have a profound impact on these imported management techniques, resulting in the emergence of a distinctive Iranian management style. The use of the term "distinctive Iranian management style" may not be entirely correct as no such style exists as in the case of say Japanese or American management. However, it is believed that Iranian factors discussed below wielded sufficient influence on the imported management techniques so as to create a "distinctly" Iranian management method. Unfortunately, to date no extensive studies on Iranian management has been carried out and, therefore,

this study has to rely on general observations to discuss the subject.

2.3.1- The State Intervention

Chapter Four discussed how the Iranian state, due to weakness of the domestic private sector and lack of foreign investment, took the leading role in the country's industrialisation process in both inter and post-war periods. This state intervention has had a major impact on the character of Iranian management in the sense that the managers in charge of companies established by the state have been more bureaucrats than professional managers. These managers have been concerned with fulfilling the state objectives such as industrialisation and creation of employment, etc, rather than running their companies as commercial concerns. In fact, almost none of the enterprises established by the state in the four decades have developed into viable commercial companies able to compete successfully in both domestic and foreign markets. Most state owned companies are being managed more like a government department rather than commercial entities, with their managers being bound by bureaucratic controls. These managers have been more concerned with discharging their legal duties than with planning, decision making, or organising as would be expected of professional managers.

This situation has impeded the evolution of a class of professional managers capable of spearheading Iran's industrialisation and establishing competitive industries.

State intervention, however, is not the only cause of the underdevelopment of managerial talent in Iran. Another factor, namely, the role of the merchant bourgeoisie in Iran's industrialisation efforts is also as important.

2.3.2- The Role of Bazaar Merchants

Generally speaking, there are two types of merchants in Iran: those engaged in domestic trading like buying and selling locally produced agricultural and manufactured products as well as imported goods, and those active in imports and exports. The latter, due to their contacts with the outside world, were relatively the most progressive section of Iranian society in the latter part of the 19th and first half of the 20th Centuries. They played a leading role in the 1906 Constitutional Revolution whose main objective was the abolition of feudalism and creation of a modern democratic and capitalistic state along European lines. The uprising, however, did not succeed in achieving its aim and large landowners continued to exert great influence on Iran's economic policy. Some of the wealthiest merchants, nevertheless, began to establish small scale consumer goods factories catering for the domestic market.

Iranian merchants possess several characteristics which have had decisive implications for the country's economy as well as the management system. First, almost all trading activities have been one-man or family operations. Usually, a person with a good instinct for business would establish a small trading shop dealing in a few goods. If he manages to establish a good reputation and creditworthiness for himself in the bazaar, he would be able to expand his business and become an important and respectable merchant. In some cases, other members of the family, usually the merchant son(s), would help him in running the business and would take over the business after his retirement or death. The merchant himself, however, would assume all responsibility for running the business, delegating little responsibility to either his employees or family members. The major fault of this type of one-man operation is that the merchant's experience would never be documented or transferred in a systematic way to his

employees or other prospective businessmen. As a result, when the merchant dies, all his experience and knowledge would also perish with him.

Second, although Iranian merchants are clever businessmen, few have had much education, particularly in higher or university establishments. Consequently, they have not been able to utilise the latest scientific and technological developments in their business operations.

The combination of the two above factors have resulted in the underdevelopment of business organisations and the non-emergence of a class of professional managers in Iran. This is particularly more pertinent as one considers that trading's contribution to national wealth generation is second only to agriculture. This situation contrasts sharply with that in Japan, where merchant families such as the Mitsuis established large and dynamic trading companies, which in turn became instrumental in Japan's industrialisation and expanding foreign trade.

Some progressive Iranian merchants, however, for commercial as well as nationalistic reasons began to establish small scale manufacturing plants from the beginning of the 20th Century. The earlier efforts mainly ended in failure as the unavailability of a skilled workforce, inadequate infrastructure and lack of tariff autonomy hampered the construction, operations, and profitability of those plants.

With the regaining of tariff autonomy in 1928, improvements in infrastructure, especially transportation, and direct state intervention in the domestic economy and its support for industrialisation, some merchants began to set up manufacturing operations to produce goods for the heavily protected domestic market. So in the 1930s, wealthy merchants, in conjunction with the state spearheaded the industrialisation of Iran. The reason why merchants and not other sections of the society entered manufacturing was

that only the former had the capital, knowledge, and connections necessary for entering into such high risk ventures.⁶

Iran's industrialisation process came to an end in 1941 when the country was occupied by the Allied forces. It was not until the mid-1950s, after the signing of the Consortium Agreement, that the government once again resumed its industrialisation efforts by directly establishing various plants and persuading the private sector to assume a larger role in that process.

The merchants' involvement in Iran's industrialisation became even more omnipresent after the 1963 uprising when the Shah's regime broke ties with its traditional supporters, i.e. landowners and bazaari merchants. Many wealthy merchants sensed the new opportunities created by the government's new import substitution policy and eagerly began to convert their commercial capital to industrial capital. The 1963-78 period was the golden age of Iran's industrialisation as many consumer goods industries were established by the merchants and *nouveau riche* groups who had connections with the regime. As the private sector was not yet strong enough, state assumed the responsibility for setting up the heavy and chemical industries. All these industries enjoyed government support which supplied them with cheap and easy-term finance and erected prohibitive tariff and non-tariff barriers to protect them against foreign competition.

Because of heavy protection and lack of any export performance or local content requirements, many of these industries became very inward looking and mere assemblers of imported intermediate goods, with no product innovation or indigenous R & D. This resulted in the emergence of an inward looking and passive management with little regard for human resources management, product and process innovation, or marketing.

The merchants brought their style of management into the companies they established: i.e. they adopted a mercantilistic attitude towards manufacturing. They occupied the posts of chairman and chief executive of their respective enterprises and delegated little responsibility or decision making to subordinates. In fact, throughout this period (1950-1979), the lack of separation between ownership and management impeded the capitalistic development and formation of a class of professional managers in Iran. Even when in the early 1970s owners of manufacturing companies were forced by the government into selling a portion of their shares to the public, the former continued to dominate their enterprises by offering only limited number of preference shares with no voting rights.

The control of owner-managers over their companies was almost total as employees were not allowed to form workers councils or participate in the decision making process. The only trade unions in Iran were the strictly controlled state sponsored ones which were more of a control mechanism than workers representatives.

Another aspect of the Iranian state owned and private companies was the preference of top management for employing people with academic qualifications rather than those with business initiative and experience.

The combination of all the above factors not only hindered the development of management talent in Iran, but also caused the alienation from their workplace of workers who had little company loyalty. Most workers regarded their job as a source of income rather than as a means of fulfilling their goals or ambitions.

This state of affairs has had implications for the industrial and economic development of Iran. Almost none of the manufacturing companies established in the 1950s to 1960s managed to pass the assembly stage and have remained as dependent as

ever on imported technology and intermediate inputs for the production of the limited range of goods that they produce. Moreover, none of these enterprises have managed to enter the export markets in a big way as they have concentrated on catering for the protected home market with inferior products.

2.4- The 1979 Revolution and the Emergence of Islamic Management

The revolution of 1979 had several effects on the process of industrialisation and management style in Iran. For one, the new government, which regarded foreign investment as a means of outside domination or interference, nationalised or purchased foreign interests in Iranian companies (excluding IJPC). Moreover, around 80% of private companies, whose owners were accused of co-operating with the Shah's regime, were also nationalised. As a result, the private sector was to a large extent excluded from participation in the manufacturing sector. All the nationalised companies were put under the control of newly created state organisations such as the Deprived Foundation and the Nationalised Industries Organisation. So the state gained almost total influence over the management of manufacturing enterprises. The new regime also pronounced that it intended to implement Islamic management style in all state organisations: manufacturing, as well as bureaucratic.

Furthermore, after the revolution, workers, who had been liberated from the oppression of the former regime, demanded a greater say in the running of their companies and, for a while, gained total control of the nationalised companies. After some time, however, the new regime asserted its authority over these enterprises through the creation of Islamic Councils, exerting great influence over the affairs of their organisations, and, leaving little room for the new management to exercise its prerogatives.

2.4.1- The Definition of Islamic Management⁷

Islamic management is a distinct form of leadership which is based on Islamic ideology, beliefs, and laws. Before explaining this style of management, it is necessary to define management and Islam and who is considered to be a muslim.

In the Persian and Arabic languages, management is defined as " doing things through and by others". Accordingly, management science is described as "the science which provides a person with the knowledge to do things through and by others". Furthermore, management traits are defined as "those traits which enable a person to do things through and by others".⁸

Islam simply means submission to God, and a muslim is someone who submits himself to the will of God and obeys His instructions and laws in all aspects of his or her daily life. According to this definition, the most fundamental principles of leadership, which Islamic management style is a distinct form of, are *equity* and *justice*. Hence, in this style of management, achieving justice and equity and not personal or even the group's materialistic motivations, guide a muslim manager's actions and decisions.

In the Islamic value system, ends do not justify means. Consequently, a muslim manager must avoid any action or decision which may undermine the rights or well being of humans or religious instructions for the sake of attaining his organisational objectives. The most fundamental principles of Islamic management, which distinguishes it from other styles of management, therefore, is that a muslim manager must do what is right in the eyes of God and, if necessary, sacrifice materialistic gains for the sake of realising equity and justice. To accomplish this, a muslim manager must possess certain characteristics which can be called the principles of Islamic management.

2.4.2- The Principles of Islamic Management

The holy Qur'an has laid down the principles of leadership from which the Islamic management style is derived. According to these principles, a muslim manager must possess the following five characteristics:⁹

- (1)- Mental and Intellectual Capacity,
- (2)- Ability to Facilitate,
- (3)- Ability to Communicate,
- (4)- Ability to Choose Appropriate Associates,
- (5)- Spiritual Aspirations.

The first principle is the most important of all and, in fact, the accomplishment of the other four is conditional on first possessing or acquiring mental and intellectual capacity. Accordingly, most of the section on Islamic management will be devoted to explaining this principle.

2.4.2.1- Mental and Intellectual Capacity

This is the human's capacity to comprehend everything that happens around him. In other words, it is the mental and intellectual capability to learn sciences, distinguish between good and evil, analyze events that take place around a person and the ability to respond to them. Obviously, the higher the mental and intellectual capacity, the higher the person's ability to learn and understand the events surrounding him and the quicker his response to them. The Qur'an differentiates between the capacity to discern between divine and materialistic deeds. And this is where a muslim manager can be distinguished from a non-believing manager. Many may be management scientists and actually be very good managers but only those discharging their responsibilities towards the achievement

of religious aims, rather than materialistic gains, are considered to have the Islamic mental and intellectual capacity to be considered as muslim managers.

The Islamic mental and intellectual capacity provides a manager with the competence to manage his organisation according to Islamic rules and towards the attainment of divine goals, i.e. justice and equity. A non-believing manager on the other hand, however competent he may be, will direct his organisation towards achieving materialistic benefits for himself as well as his masters (his shareholders). And this is the essential difference between a muslim and a non-muslim manager. It is important to note that non-muslims does not necessarily mean those who do not believe in Islam, but rather those who pursue materialistic rather than godly objectives. There may be muslim managers who pursue materialistic aims and non-muslim managers who run their organisations with the intent to attain divine goals, i.e. justice and equity. In the Qur'an, the former are considered as insincere or fake muslims and the latter as muslims.

A muslim manager must have six traits, namely: acumen, diplomacy, a congenial manner, firmness and determination, magnanimity and flexibility, and be open to criticism. The more a devout a muslim, the higher the mental and intellectual capacity to have the above mentioned traits.

(a)- Acumen is the trait which enables a manager to utilise his employees and organisation towards achieving his goals. Many may have the scientific knowledge about management, but what is crucial for a manager, is to have the business acumen to enable him to utilise the knowledge and services of others for achieving his aims. A good manager must treat every individual employee according to that person's capacity, intelligence and knowledge. This is called the art of management. The way that acumen develops in a manager separates muslims from non-believers. The Islamic mental and

intellectual capacity discussed above, grants the believer with the acumen to guide his organisation towards the attainment of divine goals, whereas the non-believing manager uses his acumen for materialistic ends.

(b)- Diplomacy is an indispensable tool of management. Only a person capable of perceiving the political environment will be able to manage his organisation and employees competently. The political environment not only includes national or international politics, but more crucially, the political scene and power play within the organisation itself. In fact, the larger the organisation, the greater the need for political skills. The Islamic mental and intellectual capacity provides the muslim manager with the talent to master political skills and he in turn uses these skills to lead his organisation towards realising his religious duties, i.e. justice and equity. In other management systems, however, the manager uses his political skills towards achieving his personal ambitions, such as his own career advancement and/or the furtherance of his organisation's goals such as increasing profits or expanding its market share. This is another difference between Islamic and other management systems.

(c)- Congenial manner: In Islamic management, human resources management is considered to be the most important function of a muslim manager and has far greater priority over other management functions such as finance, production, marketing, etc. At the beginning of this section, management was defined as "doing things through others". So, having a congenial manner and good temper is a prerequisite of Islamic management. A muslim manager must have a pleasant, persuasive, courteous, and positive attitude towards his employees in order to influence them to perform their duties towards achieving the organisational goals. In other words, he should be a charismatic leader who uses the language of persuasion rather than aggression to lead his employees towards the

realisation of his objectives. In Islamic management, the use of aggression and harsh language towards employees is forbidden, unless it is realised that they are abusing the congenial attitude of management to disobey orders.

The Qur'an states that a leader (manager), in order to command the respect of his employees, must have a pleasant and positive attitude towards them, and consult them in all aspects of the business. It also states that, even if employees make mistakes in the course of doing their jobs, the manager must not lose his temper but try to point out their errors with calmness and composure. Moreover, employees must not be punished for their blunders but be given the opportunity to rectify their mistakes (positive conditioning). This should be done to the extent that these mistakes do not undermine the whole organisation or the well-being of other employees. The Qur'an takes this style of human resources management, i.e. positive conditioning, very seriously, as it instructs leaders (managers) to always remind employees of positive aspects of their personalities and the contribution they make to the organisation, and avoid unnecessary criticism of their weaknesses.

The Qur'an pronounces that only those with high mental and intellectual capacity possess the good temper to treat the people around them with respect and dignity.

(d)- Firmness and determination: The Qur'an interprets firmness as the ability to lead one's organisation with total commitment and determination towards its goals while paying due respect and consideration to employees. In Islamic management, a good manager is the one who, does not hesitate in making and implementing decisions necessary for the running of his organisation, and the one who with total determination and resolution, eliminates all obstacles in the way of realising his organisational goals. It is therefore, true to say that from the holy book's viewpoint, lack of firmness is far

more harmful to the organisation than making a few mistakes.

However, in Islamic management, firmness is devoid of aggressive, unpleasant, and insulting behaviour. In fact, the Qur'an states that firmness should be conducted in a courteous and polite manner. In this system of management, if the firmness of a manager is to be effective, it must be implemented with some degree of flexibility and consideration for the people who are affected by it. Imam Ali, the first leader of Shi'at muslims, asserts that in order to achieve his goals and have strong management, a muslim manager should mix firmness with flexibility and cordiality.¹⁰ He adds that application of absolute firmness or absolute flexibility will lead to disastrous results for both the manager and the organisation under his control.¹¹ According to the holy book, only those with high mental and intellectual capacity are capable of being both firm and flexible at the same time.

(e)- Magnanimity and flexibility: One of the essential traits of Islamic management is magnanimity and flexibility. This enables the manager to utilise his employees with different social, educational backgrounds and personalities for the furtherance of his organisational objectives. Here magnanimity is used to mean being benevolent, merciful, and flexible. Furthermore, in Islamic management, compromise is encouraged, as it enables the manager to manage his organisation in diverse, and sometimes hostile situations.

In the Qur'an, God instructs the Prophet Muhammad to be magnanimous towards people so that they are persuaded to accept Islam and adds that magnanimity will enable him to induce muslims to work towards the attainment of Islamic values and goals. Magnanimity is, in fact, a very important aspect of leadership in Islam and the Qur'an, on several occasions, asks muslim leaders to use it for the spread of Islam and

advancement of their religious and political goals.

(d)- Open to criticism: In the Islamic management style, the manager must give his employees the opportunity to question and criticise his decisions and actions regarding the organisation. Moreover, he must listen to such criticism with patience and, if he realises it is correct, he should take action to rectify his mistakes. As mentioned earlier, Islam realises that leaders (or managers) do make mistakes. However, what is important is the manager's willingness to listen to his employees' criticism and correct those errors. Islam pays great attention to consultation and regards a competent leader or manager as the one who consults his subjects or employees on every major decision or matter of concern. Accordingly, in Islamic management, workers do have the right to participate in the management and decision making process of their own organisations. This, it is believed, would reduce the chances of making mistakes and, more crucially, it ensures that the organisation is run for the benefit of everyone involved in it and not only for profits of the managers or owners. Islamic management espouses the idea that workers should have the right to play a role in appointing their organisations' managers and also be given the opportunity to question their manager's decisions.

With regard to workers' participation, in Islamic management, the organisational chart unlike other management systems, is horizontal rather than vertical, i.e. there is no hierarchy in an Islamic organisation. Every one working for such organisation, has the same status regardless of his position within the organisation. Moreover, in Islamic management, decision making is down-up, i.e. it is the workers who make the decisions and it is the responsibility of the management to ensure that they are implemented according to the wishes of the workers.

In this respect, Imam Ali asks his people to evaluate and criticise his every action

and decision and, moreover, instructs his governors and administrators to be open to receiving criticism from people. He believes that just criticism strengthens rather than weakens the Islamic government and institutions.

Lastly, Islam believes that only people with Islamic values and goals and those with high moral and intellectual capacity are capable of accepting criticism and responding to it in a positive and open manner.

In this section, the first principle of Islamic management was discussed in detail. The following section will briefly review the other four principles. It is, however, important to note that these four principles, are, to a large extent based on, or derived from the first one, i.e. mental and intellectual capacity.

2.4.2.2- Ability to Facilitate

A muslim manager, must have the ability to organise the work environment in a harmonious and appropriate way which would assist employees to realise their potential and contribute to the attainment of the organisational goals. In Islamic management, exploitation of workers for the achievement of organisational goals is expressly forbidden, and workers are required to work to the best of their abilities. In this system of management, fulfilment of personal goals should be given a high priority, and employees must not be asked to perform duties which are forbidden by Islam.

2.4.2.3- Ability to Communicate

A muslim manager has to be a good communicator. This is essential not only for communicating matters regarding the organisation itself or those who work for it, but

also for propagating Islamic values and teachings. In fact, in Islamic management, a manager is also the religious leader (Imam) of his own organisation. Furthermore, it is the religious duty of the manager to set an example as a devout muslim for his employees and discuss with them religious matters on regular basis. It is for these reasons that good communications is regarded as one of the principles of Islamic management.

2.4.2.4- Ability to Choose Appropriate Associates

The ability to choose appropriate associates and employees is a very important function of a muslim manager. This is not only to ensure that people with the right expertise and knowledge essential for the efficient running of the organisation are employed, but rather, a muslim manager must select those people who share and believe in the objectives of an Islamic organisation. Earlier on, it was stated that the goal of an Islamic organisation and its management is not materialistic gain but rather the realisation of equity and justice. Therefore, the management of an Islamic organisation must only employ those who share these religious aspirations and must avoid hiring those who want to join the organisation for purposes other than the above two goals.

2.4.2.5- Spiritual Aspirations

This principle has already been explained in the preceding sections. Briefly, in the Islamic management system, the manager should work towards the realisation of equity and justice and not for personal or materialistic gains. Moreover, such a manager must ensure that organisational aims and those of his employees are directed towards the achievement of such goals.

In order to do so, the management of an Islamic business organisation should enter into those lines of activities or produce those goods which will contribute to the well-being of muslims and the development of the Islamic society. Such organisations must avoid producing those goods which are either forbidden by Islam or will encourage excessive consumption, corruption and crime in the society. These products or activities include luxurious goods, alcoholic drinks, gambling, etc. Moreover, in Islamic management, marketing for the sake of encouraging conspicuous consumption is not encouraged and only marketing to the extent that it informs people of the existence and attributes of the product is permitted.

This style of management is a result of the Islamic economic philosophy which forbids any economic activity that is undertaken for the sole purpose of making profit and advocates that business enterprise should only operate for the betterment of human life and the attainment of equity and justice.¹² Obviously, in such an economic system, the role of marketing cannot be the same as in capitalistic economies where it is carried out for the sole purpose of increasing sales and profit maximisation.

2.4.3- The Implementation of Islamic Management

Generally speaking, the management style of any given country is to some extent, a function of its economic system.¹³ For instance, as discussed earlier, the Iranian management style has been heavily influenced by bureaucratic and mercantilistic demeanour as the both the state and bazaari merchants played a decisive role in the country's industrialisation. The Islamic management style is also an element or function of Islamic economic ideology.

It is quite clear from the preceding discussion on the principles of Islamic

management that in such a style of management, the welfare and rights of workers are given far more consideration than the rights of the owners or the capital. In fact, in an Islamic society, business organisations only exist to serve the needs of muslims and are a means of improving their quality of life as well as helping muslims to achieve their spiritual goals. It was also stated that the Islamic economic ideology forbids undertaking any business activity for the sole purpose of profiteering and advocates that all economic endeavour should be directed towards the attainment of equity and justice.

It is evident from the above argument that Islamic management can only be implemented in a country with an Islamic economic system. Although a few countries like Iran, Pakistan and Saudi Arabia are Islamic states, none have yet managed to establish a national economy based on the principles of Islamic economic ideology. All they have achieved so far is the adaptation of Islamic justice laws (*Sharia*) in their legal systems. The *sharia* does include important and comprehensive provisions for regulating economic activities and business organisations. But even these laws have been implemented only half-heartedly for the simple fact that these countries have to trade with countries (such as in the West) whose judicial systems are vastly different and, therefore, have had to incorporate some of the latter's laws within their own legal systems.

The failure to adopt an Islamic economic system is not due to lack of will on the part of politicians or people (at least large segments of the population), but rather to the fact that these countries are only small players in a world economy whose foundations are based on the capitalistic and free market economic system in which the main motivation for undertaking any type of economic activity is making profit. As the experience of socialist countries has shown, it is very difficult, or rather impossible, for

alternative economic systems to survive in a capitalistic dominated global economy.

The same holds true in the case of countries who want to implement the principles of Islamic ideology in their national economies. They not only have to operate within the parameters set by the world economy but also face strong opposition by those segments of their societies who have a stake in the present economic system and whose interests are closely linked to those of the international economic order. Two examples of such obstacles can be seen in the case of the Islamic Republic of Iran which tried to introduce some elements of Islamic economic principals into the domestic economy.

It is well known that paying and receiving interest (*usuary*) is forbidden under Islamic laws. After the Revolution of 1979, the Islamic government of Iran advocated changing the country's banking system based on interest to one which prohibited paying or receiving interest by the banks. After a few years of deliberation, the Islamic banking system was introduced which was not supposed to pay interest on deposits or receive interest on loans. Instead, banks were instructed to invest their depositors' money in various economic activities, and distribute their profits, after deducting a certain amount for their expenses, to the depositors.

The reality is, however, far from what was originally intended. Iranian banks are still paying interest on deposits and charge interest for the loans that they extend. All the changes are in fact superficial and only the terms used in the banking system have changed. This is not because there was no genuine intention on the part of the government, but rather the realisation of the fact that the Iranian banking system cannot be fundamentally different from its counterparts in other countries, as they all operate within the same economic system and according to the same principles, i.e. profit maximisation. Moreover, in the last few years, the Iranian Ministry of Finance and the

Central Bank have used interest rates as a tool of their monetary policy to curb inflation. This shows that the Islamic banking system exists only in name. Other countries which have introduced the Islamic banking principles have had the same experience as Iran as they have failed to eliminate interest from their banking systems.

Another example, which demonstrates the difficulties of introducing Islamic management system in a predominantly capitalist economy is the Islamic Republic's repeated attempts to introduce labour relation laws based on Islamic principles. The first labour relations legislation was drawn up during the first term of M. Mussavi's Premiership (1981-89) by the Ministry of Labour. This legislation, drafted by those with close connections to the bazaari merchants was so reactionary that it actually proposed to reduce rather than enhance workers rights. After a few years of intense debate, the legislation was finally rejected by the Majlis (the Iranian Parliament) and the government had to rely on laws from the Shah's regime to regulate labour relations.

After the election of President Rafsanjani, a new and far more modern labour relations legislation was drafted and, despite opposition by some traditional Deputies, was passed by the Majlis. However, the Ministry of Labour, due to strong resistance from the Iranian Chamber of Commerce, the most powerful economic organisation, has been having difficulty in implementing the provisions of the Act.

The two above examples, especially the latter one, show that the Islamic management system cannot be implemented in a country unless the whole of the economy is based on Islamic economic principles. However, as the present world economic order has a capitalist structure, it is very unlikely that an alternative economic system, such as the Islamic, can emerge in the Islamic world in the foreseeable future. Consequently, it is very unlikely that the Islamic management system will be

implemented in these countries in a meaningful or practical way.

As the experience of Iran shows, although few Islamic scholars¹⁴ have written on the subject of Islamic management, neither they nor the Islamic government have yet established a theoretical or practical framework applicable to modern organisations. Moreover, there is no evidence that Islamic management style has been implemented in a meaningful or comprehensive way in any Iranian business or state organisation. In reality, Islamic management has remained a concept without being implemented in a systematic and scientific manner by Iranian organisations. As a matter of fact, foreign management styles imported during the 1950s to 1970s, combined with a heavy dose of bureaucratization have continued to be used by Iranian managers.

Therefore, one can deduct that, despite the wishes of many Islamic countries and muslims a management style, based on Islamic principles will be very unlikely to materialise in these countries in the near future and it will remain a concept rather than a reality. Any attempts in that direction will only be superficial and cosmetic, and will be seen only as a means of exploiting workers religious beliefs for the benefit of business owners and the state.

3.0- The History and Organisational Development of NIOC

3.1- NIOC's Management and Organisation Under the Shah

Immediately after the oil nationalisation of 1951, the National Iranian Oil Company (NIOC) was created to manage the domestic industry thus far run by AIOC. The new company was denied the share of overseas assets of its predecessor and all it was left with were the latter's assets within Iran. NIOC did not gain control over the Policy Making Board stationed in London, top and middle management in Iran, R & D,

Engineering and Procurement Departments, tanker fleet, worldwide refineries, or distribution and sales facilities all over the world.¹⁵ All NIOC was left with were assets within Iran like oilfields, pipelines, refineries, distribution network, filling stations, buildings, etc.

Although the 1954 Consortium Agreement recognised NIOC's ownership of oil and gas reserves and all equipment and buildings used in the Iranian oil industry, it denied the company the right to utilise these assets on its own for the duration of the Agreement. Under the terms of the Agreement, Consortium members were given total freedom to exploit all oil reserves within the concession area and employ all equipment necessary for their operations. In fact, all NIOC was left with was the internal distribution network and responsibility for the Consortium's non-basic operations such as housing, health, education, recreation, and general welfare of the employees. These arrangements were against both the letter and spirit of oil nationalisation which had advocated total Iranian control over the domestic industry.

However, in the same year (1954) NIOC was granted a new status and was merged with the Iran Oil Company, which had been formed under the First Seven-Year Development Plan for all operations outside the concession area, and a new Board of Directors was appointed. The reorganised NIOC had experience only in internal distribution and oil exploration brought in by the Iran Oil Company.¹⁶

The six new Executive Directors of NIOC were all graduates of British universities. The majority of top and middle management were either graduates from British educational institutions or from Abadan Technical Institute which itself was an offshoot of British technical institutions.¹⁷ This, plus the fact that NIOC retained all of the organisational and managerial characteristics of its parent ensured the continuation

of a British management style in the company which had been practised for nearly fifty years by AIOC.

Legally, NIOC, is not a public corporation, as may be implied by its name. According to its Constitution it is a commercial company, paying tax at the rate of 50% on its net profits. All of its shares are, however, owned by the Iranian government and are not transferable. The representatives of the shareholders at the General Meeting of the Company during the Shah's regime were the Prime Minister, Minister of Finance and Economic Affairs, Minister of Energy, Minister of Industry and Mines, Minister of Labour and Social welfare, Head of Plan and Budget Organisation, and another Minister appointed by the Premier.¹⁸

The GM was (is) responsible for the appointment of the Board of Directors, setting the Company's strategy, and approving its plans. The Chairman of NIOC, who also acts as the Managing Director, was, however, appointed by the Shah and reported directly to him. The Chairman of NIOC, although not a member of the cabinet, unofficially had the position of a superminister. This was due to the fact that the Company supplied more than 90% of the governments annual revenue and country's foreign exchange earnings.

The appointment of NIOC's Board members and Chairman by politicians made it susceptible to political and bureaucratic interference in its operations and decision making process. Some Executive Members of the Board, who themselves had to have at least ten years of experience in the oil industry to be qualified for such positions,¹⁹ considered political appointees, especially the Chairman, to have a negative impact on the operations of the Company.²⁰ In their view, the political pressures and "influence peddling"²¹ brought about by political appointees and their associates within the regime,

made it difficult for them to run NIOC as a corruption free and successful oil company.

In order to lessen political influence and strengthen its management, the Constitution of NIOC was revised in 1974. Under the new rules, the number of Board Members was raised to ten, including the Managing Director. Five Alternate Directors were also to be appointed by the Board itself. All Board Members had to have at least ten years experience in the oil industry and must have occupied an important position within the Company for five years.²² Moreover, the Chairmen of the two main subsidiaries of NIOC, the National Petrochemical Company and the National Iranian Gas Company were also appointed to the main Board of the Company. In view of the newly found importance of petrochemicals and gas in the overall export policy of NIOC, there was the need to involve the heads of these two companies in the overall policy making machinery of the Company.²³ These were the last major changes to NIOC's organisation in the Shah's regime. After the revolution the Company underwent major changes which will be discussed in the next section.

Finally, the Shah's government several times considered the establishment of a Ministry of Oil with responsibility for the domestic petroleum industry, but it never materialised. Although the Chairman of NIOC unofficially had the status of a superminister, it was the Minister of Finance who represented Iran at OPEC meetings and other international gatherings related to the oil industry.

3.2- NIOC After the Revolution

Before or immediately after the establishment of the Islamic government, many of the Board members and other top managers of NIOC and its subsidiaries who feared for their safety fled from Iran. Those who remained were purged by the new government

on the grounds of co-operation with the Shah and foreign interests and were replaced by supporters of the revolution. Moreover, the Islamic government considered the presence of foreign companies in the Iranian oil industry detrimental to the national interest and therefore ended the last remaining influence of the Consortium over the oil industry and bought or nationalised the shares of all foreign companies.

In order to bring the petroleum industry under total control, the Islamic government established the Ministry of Oil with responsibility for all oil related activities. The Minister of Oil also acts as the Chairman and Managing director of NIOC. Initially, the Ministry sought to dissolve the Company and run the industry like a governmental department. But, because of strong opposition from NIOC, it shirked the idea, and instead put the Company under its direct control, and assumed responsibility for decision making and operations. This new arrangement obviously made NIOC management more prone to political and bureaucratic interference.

Furthermore, due to political instability in the early years of the revolution, there were frequent changes to the top management of NIOC and its subsidiaries. As later chapters will show, these changes prevented the Ministry, NIOC, and NPC from devising a cohesive strategy towards IJPC, with the result that it took nearly nine years to reach a final decision on the future of the joint venture.

Finally, it is important to note that in reality and contrary to its Constitution, NIOC is a public corporation. It has no profit maximisation motive and its operations comply with the overall government policy rather than making a profit.²⁴ The Company is under the tight control of the government and the presence of cabinet ministers at its Annual General Meetings ensures that its policies are carried out. Moreover, as NIOC and its subsidiaries have to get the approval of the Plan and Budget Organisation for

their investment plans, they are effectively devoid of any freedom to make commercial decisions without political and bureaucratic interference.

As mentioned at the beginning of this chapter, the National Petrochemical Company inherited many of the organisational and managerial characteristics of its parent company, NIOC, and, therefore, the former's organisational characteristics will not be discussed here. Suffice to say, that NPC was a very small company in terms of number of employees. In 1973, the Company employed 3,788 people of which only 752 were salaried staff and the rest were either waged, temporary, or contractors' workers.²⁵ This was at a time when the total number of those employed in the Iranian oil industry was 42,325.²⁶ This shows that NPC was not in a position to undertake a large petrochemical project, such the proposed joint venture with the Japanese group, without severely straining its organisational capabilities and putting undue pressure on its small number of staff.

In the next chapter, the history of the establishment of NPC and its strategy regarding the expansion of the Iranian petrochemical industry will be discussed in detail.

4.0- Conclusion

This chapter argued that due to the presence of many foreign companies, the management styles of Britain, the United States, and Japan were imported into Iran from the 1930s to 1979 respectively, with the second one exerting the greatest influence. However, these styles of management were conditioned by the peculiar mode of Iran's industrialisation, namely, state intervention and the role of the bazaar merchants in that process. As a result, the Iranian management style has developed as a mixture of foreign management practices with bureaucratic and mercantilist attitudes.

It was also stated that after the 1979 Revolution, the new government proposed the implementation of Islamic management practices. Such a management system is very much oriented towards the welfare of workers and espouses the idea that the attainment of Islamic values: equity and justice and not profits, should be the main objective of Islamic business organisations.

It was argued that the Islamic management style is a function of the Islamic economic ideology and, therefore, cannot be implemented on its own in the predominantly capitalistic economic systems which exist in many Islamic countries and throughout the world. Anyhow, despite the efforts of a few muslim scholars and wishes of many muslims, an Islamic management system, applicable to modern organisations has not yet been developed. So Islamic management has remained a concept without any scientific and practical foundations. Due to the above two factors, it is believed that a distinct and Islamic management style will not emerge in the foreseeable future and any attempts in that direction will be cosmetic rather than genuine intentions.

Finally, the organisational characteristics of the National Iranian Oil Company, the parent of the National Petrochemical Company were discussed. It was learnt that, due to the training of many of the managers of the two companies by the Anglo Iranian Oil Company, and the education of many of their executives and engineers at British universities, British management styles were adopted by both companies. It was also stated that, despite its Constitution, NIOC is not a commercial company and is run more like a governmental department than an oil company. With the establishment of the Ministry of Oil after the Iranian Revolution, bureaucratic interference in the activities of both NIOC and NPC increased with the result that both companies were unable to make sound, economic decisions with respect to their activities. This lack of autonomy,

prevented both companies from reaching a viable decision regarding the future of LJPC for nearly 10 years.

In the next chapter, the history of LJPC from the exploratory talks in 1968 to its dissolution in 1990 will be discussed.

NOTES

1.Hamauzu, T., "Japan's Economic Relations with Iran: Trade and Private Direct Investments", Institute of Developing Economies, 1991, p.35.

2.Ibid.

3.See Ibid, pp.34-52 for an analysis of the performances of nine Japanese manufacturing joint ventures in Iran in the 1970s.

4.See ibid, pp.39-41 for details.

5.Ibid, pp.42-43.

6.For details of manufacturing plants established in the inter-war period in Iran see Chapter Four.

7.This section on Islamic management is based on a series of articles by Hojat-Al-Islam Ray Shahri and one article by A.A. Afjeh'i, under the title of "Islamic Management" in 'Danesh-e-Modeeriat' (Management Science) Quarterly, Faculty of Management, University of Tehran, Numbers 2 to 7, Autumn 1988 to Winter 1990. (In Persian).

8.These definitions are from Dehkhoda Dictionary of Persian Language.

9.These five principles are explained in the Holy Qur'an, Chapter Tha, Verses 25 to 34.

10.Letter to Malek Ashtar; the Governor of Egypt, Circa, 7th Century A.D.

11.Ibid.

12.For a comprehensive analysis of Islamic economic system see Sadr, Ayatollah Muhammad Baqer, "Our Economy", (in Persian) and Khomeini, Ayatollah Ruhallah, "Tahrir Al-Vasiileh", Vols 1 & 2, (in Persian).

13.Of course, cultural, social, and historical factors, among others, play an equally important role in shaping the particular management style of a country.

14.See the references at the beginning of this section.

15.Naficy, F., "A Review of Iranian Achievements in the Oil Industry", in Mostofi and MacLachlan (1991) op cit, p.5

16.Ibid, p.6.

17.Ibid, pp.7-8.

- 18.Fesharaki (1976), op cit, p.201.
- 19.Fesharaki (1976) op cit, p.200.
- 20.Naficy (1991) op cit, p.6.
- 21.Ibid, pp.6-7.
- 22.Fesharaki, op cit, p.200.
- 23.Ibid.
- 24.Fesharaki, op cit, p.201.
- 25.Fesharaki (1976), p.147.
- 26.Ibid.

PART TWO

CHAPTER SEVEN

THE HISTORY OF IJPC: FROM FORMATION TO LIQUIDATION

1.0- Introduction

As stated in the introductory chapter, in order to understand why some joint ventures are successful and some are not, one needs to look at the managerial style and organisational characteristics of its parents and also what actually goes on in the management of the joint venture itself.

In the previous two chapters, the developments, management, and organisations of Mitsui Bussan and the National Petrochemical Company of Iran were discussed respectively. It is evident from those analyses that the two companies were vastly different in every aspect: historical development, organisational and managerial characteristics, and business philosophy.

The present chapter will examine in detail what actually went on in the creation and management of the petrochemical joint venture from the exploratory talks in 1968 to its dissolution in 1990 to discover the factors which contributed to its failure.

First, the theories on the reasons for the formation of joint ventures will be reviewed. Then, the Iranian and Japanese reasons for wanting a petrochemical joint venture will be examined. Next, the history of the Iran Japan Petrochemical Company from the exploratory talks between the National Petrochemical Company of Iran (NPC) and Mitsui & Co. in 1968 right up to the "Friendly Separation Agreement" of 1989 will be discussed in detail. We will then examine the effects of the two oil shocks of the 1970's, the Iranian Revolution of 1979, the Iran-Iraq War, and the sharp drop in oil prices in 1986 on the joint venture. Accordingly, the chapter will be broken down in the following manner:

- (1)- The formation and construction period (1968-1978).
- (2)- The suspension period (1979-1980).
- (3)- The war years (1980-1988).
- (4)- The separation and re-construction period (1989-to date).

Moreover, in order to have a better organisation and a clearer understanding of various factors which effected the joint venture, these periods will in turn be sub-divided into the financial details, the organisation and management , and the construction progress and technical matters of IJPC.

The aim of this chapter is to establish why the joint venture was established in the first place, what were its managerial and organisational characteristics and why it failed. The next two chapter will analyze in detail the factors which are believed to have led to the failure of IJPC and will try to draw some lessons for the partners and joint ventures.

2.0- Causes of the Establishment of IJPC

In Chapter One, the theoretical framework for analyzing the causes of the establishment of a joint venture, and the factors which will determine its success or failure, were laid down. It was expounded in section 3.3 of that chapter that in order to understand why some joint ventures are successful and some are not, one must look into the strategy of the parent firms, the reasons for entering into the joint venture in the first place, the firms' organisational characteristics as well as their industries. Chapters Four and Five discussed the strategies of NPC and Mitsui & Co and their reasons for wanting a petrochemical joint venture. Moreover, in Chapter Five the organisational characteristics of Mitsui & Co. were analyzed and, it was learnt that the company has always had a decentralised organisation and puts great emphasis on the personal

initiative of its employees especially in matters regarding foreign investment.

First, in the next section, the Japanese and Iranian factors which led to the establishment of IJPC will be summarised.

2.1- The Iranian Factors

For various reasons such as gaining added value from her hydrocarbon reserves, industrialisation, development, security, and national prestige, Iran wanted to develop her petrochemical industry.

As explained earlier, the gas associated with the production of oil was (and still is) being needlessly flared, and the Shah always wanted to put this gas to better use. Moreover, as oil reserves are finite, Iran wanted to use these reserves for the development of her domestic industries. The best way to achieve this was to use the associated gas as a feedstock for a petrochemical industry.

Iran could accomplish two objectives by developing her petrochemical industry: use the wasting gas to produce high added value petrochemical products, and in the process boost the country's industrialisation efforts.

But why is it that Iran wanted to industrialise in the first place? Well, almost any developing country dreams of catching up with the industrialised world. But in Iran's case, there were probably a few specific factors as well.

Iran's population was growing at a very high rate (she still has one of the highest birth rates in the world). Therefore, new jobs had to be created to absorb this growing population. And as Chapter Four showed, the creation of new jobs was one of the main aims of successive development plans. The government of the time reasoned that the only way to develop the economy and create new jobs was through rapid

industrialisation. It further believed that the country, being rather arid, could not achieve the above aims by expanding the agricultural sector which was the main sector of the economy at the time (an argument forcibly disputed by many experts).

Although the petrochemical industry is a capital intensive industry and, hence, provides few job opportunities on its own, it has the advantage of creating twenty new jobs for every job in the industry itself by establishing forward linkages with downstream industries (the industries which use petrochemicals to produce capital and consumer goods products). So the petrochemical industry could create the best conditions for generating jobs throughout the whole economy.

There were probably a few unspoken reasons for the Shah's determination to industrialise the country. Iran is a socially unstable country and, due to this fact, the country's political and economic stability have been undermined by revolutions, mini-revolutions, social unrest, coups, etc. Furthermore, as Iran borders the (old) U.S.S.R, her politics have always been influenced (at least until recently) by the latter. As a result she has had the highest number of communist organisations in the region.

The Shah, therefore, believed that the best way to eliminate the above two factors (i.e. social instability and influence of communists) was for the economy to grow rapidly so that everyone would have a stake in the stability of the country and his regime.

There was also the question of national prestige. Iran, which was once a great country, had fallen into poverty, instability, and backwardness since the Sixteenth Century, and the Shah dreamed of restoring her former glory. He always stated his aim of making Iran the fifth industrial power in the world by the early 21st Century.

So all these factors (social, political, economic, and personal ambitions) favoured the rapid industrialisation of Iran, and the only way to do this was through the

development of hydrocarbon based industries particularly petrochemicals in which she was perceived to have a "comparative advantage".

Due to these considerations, the Iranian Council of Ministers, on 24 December 1963, founded the Supreme Council of the Petrochemical Industry with the responsibility for the establishment and development of the Iranian petrochemical industry.¹ Then under the provisions of the 1964-65 Budget (Iranian financial year), all activities related to the development of the domestic petrochemical industry were put under the control of the National Iranian Oil Company (NIOC).² One year later the Petrochemical Industries Development Act was passed by Majlis (the Iranian Parliament) and finally, on 3 August 1966, the Article of Association of the National Petrochemical Company was approved by the Council of Ministers. The Act and the Article of Association authorised NPC to manage all activities related to the domestic petrochemical and related industries.³

In order to meet the fast expanding domestic demand for petrochemical products, capture foreign markets and make the most efficient use of resources, NPC decided to use the latest technology and extensive marketing methods. Moreover, the Iranian government planned to spend about \$11 billion in the Fourth and Fifth Development Plans for the expansion of the petrochemical industry. This was, however, at a time when oil revenues, the main source of income, had hardly reached \$1 billion a year (see Chapter Four for details).

To develop the industry, Iran needed five main inputs, raw materials, capital, technology, manpower, and large domestic and foreign markets. Iran could supply the required raw materials for the production of petrochemicals like natural gas, salt, and naphtha at very low prices, but she lacked almost all other inputs for the development

of the industry as envisaged by the government. As mentioned before, Iran lacked the advanced technology, adequate capital and trained personnel to develop the petrochemical industry on a large scale. Moreover, the Iranian domestic market at that time (in the 1960's/70's) was not large enough and so she needed to export petrochemical products to foreign markets to justify the establishment of economically feasible plants (as well as earning foreign exchange). But a major problem with exports was that the international petrochemical markets were dominated by few large oligopolistic firms, and it was extremely difficult for a newcomer, especially from a developing country, to break into that market.

After one year of preliminary studies by NPC, a report was submitted to the Supreme Council of the Petrochemical Industries.⁴ The report stated that production of primary petrochemicals would be uneconomical unless they were processed into higher value added intermediate and final products. The report also explained that with regard to technical aspects and economics of the petrochemical industry, the plant capacity for production of intermediate and final products must be much higher than average. The conclusions of the report were approved by the Council which authorised NPC to begin the search for suitable foreign partner(s) who could supply the required technology and provide export markets for petrochemical products.⁵

With this authorization, NPC intensified its search for suitable foreign partners which it had started some time before.⁶ During these efforts, lengthy talks had been held, first with American and then European oil and chemical companies, but for various reasons none had shown any interest in large scale investments in the Iranian petrochemical industries. So the only potential partner left for Iran was Japan.

Apart from offering advanced technology, capital, and a large domestic market,

Japan had the further advantage of offering Iran "technical competence, without the political baggage". Japan, in contrast to Western powers, has never had a history of colonialism, domination, or war in Iran. Although Iran had never been a colony, some European countries and the U.S. (since 1945) dominated her politics from the 18th century to 1979. Furthermore, Japan was the biggest customer for Iran's oil, importing around 40% of her oil from there during the 1960's and early 1970's.⁷ So, the consideration of the above factors persuaded Iran to seek Japan's assistance for the development of her petrochemical industry.

In fact, discussions with the Japanese over Iran's petrochemical ambitions had started a year before the completion of the report, when a Japanese economic mission headed by Keiichirou Hirata, Chairman of the National Land Development Deliberative Council, visited Iran from 5 to 10 November 1968 (1347).⁸ The aim of the mission was to settle a long standing trade dispute between the two countries, and also to learn about Iran's economic development plans and investment opportunities there.⁹

One member of this mission was Sueyuki Wakasugi, then Vice President of Mitsui Bussan [or Mitsui & Co.] who was to become President in 1969. Dr Baqer Mostofi, Chairman of NPC flew Wakasugi to the Iranian oilfields in southern Iran and showed him the "associated gas" being needlessly burnt for the want of a better use. Mostofi asked Wakasugi if Mitsui could help NPC to put the wasting gas to better use by processing it into petrochemical products. Wakasugi's response was very positive and promised Mostofi that upon his return to Japan, he would look into the production of petrochemicals as a joint venture between Mitsui Bussan and NPC. And this is when the discussions over the petrochemical joint venture began.¹⁰

According to Dr Mostofi, the main factor behind Wakasugi's enthusiasm was his

and Bussan's desire to have a share in the development of Iranian oil resources, upon which Japan depended for around 40% of her oil imports, and to expand Mitsui Bussan's oil business which was the company's Achilles' Heel.¹¹

2.2- The Japanese Factors

The question one needs to ask is why Japan and Mitsui Bussan were interested in the development of the Iranian petrochemical industry? Was it just access to Iranian oil or were there other considerations, economic as well as political? It seems that a multitude of factors favoured the establishment of a petrochemical joint venture with Iran.

In Chapter Two it learnt that it had been Japan's wish for a long time to have her own "autonomously developed oil" i.e. oil not under the control of the Major oil companies. Furthermore, in Chapter Five it was described how Mitsui Bussan felt about starting late in the oil business in the post-war period and wanting to expand its activities in that line. So, involvement in the Iranian petrochemical industry, they hoped, would give them access to the oil resources of the world's biggest exporter of petroleum at the time.

There were, however, other important factors such as wider geopolitical and economic considerations on the part of the Japanese government, and commercial opportunities for Mitsui Bussan.

Iran being located between the (old) U.S.S.R and the Persian Gulf, the source of more than 70% of Japan's oil imports was (is) of great strategic importance to her. This importance grew even more when, due to the closure of the Suez Canal during the 1967 Arab-Israeli War, oil supplies to Europe were temporarily cut off. Moreover, on several

occasions the Shah stated that his country would not take part in an oil embargo against the West for any reason.

Iran's position regarding flow of oil free of any interruptions increased her importance in the eyes of the Japanese politicians who were worried about future oil sanctions or major disruptions in oil supplies. So when Iran asked for Japan's help in her industrialisation efforts and particularly the establishment of a petrochemical joint venture, the latter responded positively. In the Japanese officials' view, a developed, stable Iran was in the interests of Japan. And one way of achieving this aim was to help Iran to develop her petrochemical industry.

Furthermore, Japan did not have strong historical ties to the Middle East as her main competitors, European and Americans did. Being a trading nation she was not happy with mere arms length commercial transactions. She wanted to build deeper and longer lasting relations with the region, and the best and quickest way was through investment. And Iran, being more economically developed and having a relatively larger population, was a prime target for Japanese investments in the region.¹²

Japan also wanted to have a major role in the industrialisation of Iran. If she could help the latter to develop her industry many new opportunities would arise for further investments, export of capital as well as consumer goods and the like.

Environmental concerns in Japan also played a role in deciding to invest in Iran. In the late 1960s the environment had been heavily polluted due to rapid industrialisation, and the government had restricted the construction of new petrochemical plants in the main industrial areas. With a small land area in Japan, the best alternative was to build such plants overseas and import their products.¹³

Mitsui Bussan too, had its own reasons for wanting to invest in Iran. Access to oil

and environmental restrictions have already been mentioned, but the availability of cheap raw materials there, exports of plants and machinery, production of liquid petroleum gas (LPG), establishing a strong presence in the Iranian market for sales of various products, and competition with domestic rivals were also important factors.

Due to the Japanese government's pricing policy, the price of the domestically produced naphtha, an important input for the production of petrochemical products was 25% higher than in Europe, and 40% more than the U.S prices. Hence the Japanese petrochemical companies were not competitive in the international markets.¹⁴ But, natural gas, the other essential feedstock for the petrochemical industry was being needlessly flared in Iran for the want of a better use. The other raw material, salt, was also freely available there. The availability of cheap raw materials in Iran would have enabled Mitsui Bussan to strengthen its competitiveness in Japanese and international petrochemical markets.

There was another factor in Mitsui's calculations regarding the investment opportunity in Iran, and that was the export of plants and machinery for the construction of the proposed petrochemical joint venture there. Probably Mitsui Bussan saw an opportunity to sell plants and machinery to Iran by investing there. As a matter of fact, one of Mitsui Bussan's own publications puts the LJPC under the category of plants exports and not investment.¹⁵

Moreover, due to new environmental regulations introduced in the late 1960s, demand for LPG which produces a much lower CO_x emission than oil products, was rising rapidly from Japanese industries and especially electric utilities. As LPG is a by-product of processing natural gas into petrochemical products, involvement in Iran's petrochemical industry would have enabled Mitsui Bussan to produce this product at very

low cost and sell it at huge profit to Japanese consumers.

In addition, in terms of sales in the Iranian market, Mitsui & Co. was well behind its rivals like Mitsubishi Corporation and C. Ito and investment in the Iranian petrochemical industry would have provided Mitsui & Co. with a big opportunity to establish a strong presence in the fast expanding Iranian market for various industrial and consumer products.

One other reason for Mitsui Bussan's decision was probably the rivalry between the major trading companies. At that time (and even now) each trading group (keiretsu) insisted on having its own petrochemical company.¹⁶ This "Me-tooism" produced intense competition in the Japanese petrochemical industry, and Mitsui may have reasoned that by investing in Iran, it would gain a competitive edge over its rivals by producing lower cost petrochemical products.

Finally, there was a perception in the late 1960s and 1970s that by the end of the 20th Century, the Middle East would become the centre of the world's petrochemical industry because of the availability of cheap feedstock there and concerns in the industrialised countries over the state of the environment.¹⁷ So Mitsui Bussan might have well concluded that it was in its long term interest to be in the Middle East before it became overcrowded.

3.0- The Start of the Negotiations Over the Petrochemical Joint Venture¹⁸

After returning to Japan, Wakasugi asked Tomita, the Director of the General Petrochemicals Department of Mitsui Bussan to investigate whether it would be possible to undertake petrochemical operations in Iran, and in particular whether ethylene production would be feasible. Tomita in turn ordered Kenji Tomio and Mitsuo Sato to

visit Iran and evaluate the situation. Moreover, Mitsui Bussan invited Mitsui Toatsu Chemical, Mitsui Petrochemical, Bridgestone LPG, and Toyo Engineering (TEC) to participate in the survey tour. Even before going, Sato doubted whether such a project would be viable, as at that time costs of petrochemical plants in the Middle and Near East were twice as high as those of U.S plants. (See Chapter Eight for the reasons for higher construction costs in the Middle East)

The Survey group consisting of 8 people travelled to Iran in February 1969 to investigate the feasibility of constructing a 400,000 ton ethylene plant, 300,000 tons of which would be exported to Japan, and 100,000 tons for use in Iran, which was equivalent to the country's entire consumption at that time.

The figure of 300,000 tons was related to the boom in Japan at that time for building 300,000 ton ethylene plants. Moreover, while the group was visiting Iran, eight Japanese petrochemical companies received permission to build 300,000 ton plants.

The group visited Bandar Shahpour, a port in southwestern Iran, where the Iranian government planned to make the country's petrochemical centre. They also visited Shahpour Chemical, a joint venture between Allied Chemical of U.S and NPC which had just been completed. The group considered Bandar Shahpour a feasible site for a petrochemical plant because of its proximity to the sea. However, they realised that transporting ethylene would be very difficult and expensive because of the need to use specialised tankers. So the investigation considered processing the ethylene into vinyl chloride monomer (VCM) or ethylene dichloride (EDC) to make it easier to transport.

The findings of the survey were not very favourable, as it revealed that construction and operating costs would be considerably higher than in Japan. The group returned to Japan to study further the economic viability of such a plant.

3.1- The Oil Connection

At the end of May 1969, Ardashir Zahedi, the then Iranian Foreign Minister visited Japan to meet Prime Minister Sato.¹⁹ At that meeting, Zahedi asked for Japan's assistance to explore oil in Lorestan, a province in Western Iran, located to the north of Khuzestan, the major oil producing region of the country. Sato passed the request on to the Japan Petroleum Development Corporation (JPDC).²⁰ The Corporation sent two representatives to Iran in October 1969 to learn about Lorestan and off-shore exploration. The Corporation, which had close relations with the Mitsubishi Group (especially the Mitsubishi Corporation and Mitsubishi Oil), gave its findings to the Mitsubishi Corporation and asked the Group to carry out an investigation of how to obtain the drilling rights to these areas.

In March 1970, an investigation group led by JPDC and including representatives from Mitsubishi Oil, the Export-Import Bank of Japan, and the Middle East Oil Company, went to Iran to examine the oil potential of Lorestan and other areas of the country.

After surveying Lorestan, the group realised that even if the area produced any oil, a 700km pipeline had to be laid to carry the oil to the sea ports for transportation to Japan. So the group reached the conclusion that the economic prospects of the Lorestan oilfields were not good.

After reaching the conclusion that the costs of constructing and operating a petrochemical plant in Iran would be substantially higher than in Japan, Mitsui Bussan, in November 1969, sent a team to Iran to negotiate for scaling down the proposed plan to 100,000 or 150,000 tons. The real intention of the team was to refuse any project at all²¹ but Hajarizadeh, the Head of Planning at NPC, produced many proposals to keep

the project alive. Moreover, the team could not ignore the successful completion of Shahpour Chemical and the potential growth of the Iranian economy, which caused its members to agree to further negotiations. So upon returning to Japan work on the feasibility study re-started.

During April and May 1970, Jun Yanaka of Bussan's General Petrochemicals Department and Sato visited Iran to establish an integrated framework for negotiations. They also wanted to know whether if 300,000 tons of ethylene were to be produced, its by-product LPG, would also be available for export to Japan.

During this visit, NPC informed the team that Allied Chemical, the American partner in Shahpour Chemical was pulling out of the joint venture and asked for Japanese co-operation in running the plant. In response to this request, Mitsui Toatsu dispatched a team to Iran in June 1970. The team judged such co-operation possible and regarded the quality of the operators working there as very high and able to run the plant on their own. This finding, which went against everything the Japanese had thought until then, gave a boost to Mitsui Bussan's petrochemical plans in Iran.

At the end of July, an engineering group consisting of representatives from Mitsui Bussan, Mitsui Toatsu, and Toyo Soda, was sent to Iran to consider the lay-out of a petrochemical plant. The reason for the inclusion of Toyo Soda, a company from outside the Mitsui Group, was the reluctance of Mitsui Petrochemical (from the very beginning), Mitsui Toatsu, and even some among Bussan's Iran team to get involved in a petrochemical joint venture in Iran, and so the latter had to turn to outside firms for assistance.

In July Allied Chemical announced that although they were basically pulling out, they would continue their technical co-operation with Shahpour Chemical. This

announcement put a stop to the talks between the Iranians and the Japanese over Shahpour Chemical. But this affair caused some concern in the Japanese team who wondered why Allied Chemical was pulling out, and cost overruns seemed to have been a major factor. The Shahpour Chemical plant had originally been planned to cost about 50,000 million yen, but because of the cost of putting in infrastructure and overoptimistic estimates, the final cost had shot up to 100,000 million yen. According to Dr Mostofi, however, the main reason for the pull-out was a major change in the global strategy of Allied Chemical which caused the company to pull-out of many markets and joint ventures around the world, including Iran.²²

Due to the negative findings of the Mitsubishi Group, the Japanese had become cool towards the idea of participation in the development of Lorestan oilfield. Disappointed with this response, Iran, on 1 July 1970, advertised in Japanese daily papers that Lorestan was open to international bidding and many Japanese companies took keen interest in this offer. One of these companies was Teijin, a textile firm, which due to poor prospects for textiles, was pursuing a policy of diversification, and expansion into the oil business was one of the main targets for the company. The Lorestan oil seemed to offer a good opportunity for entry into that business. But Teijin needed the co-operation of an experienced oil company to form a consortium with in order to be able to bid for the Lorestan oil. JPDC, which was quite interested in Teijin's bid, recommended North Sumatra Oil Exploration. Moreover, Teijin also needed an oil refinery and wanted to acquire Bussan's subsidiary, Kyokuto Sekiyu (Kyokuto Petroleum Industries Ltd)²³ for that purpose. So Teijin approached the Oil Department of Mitsui Bussan and offered to buy their oil subsidiary. During these discussions, Bussan learned for the first time about Lorestan and indicated its interest in participating in the bid.

As discussed before, Mitsui was weak in the oil business and Wakasugi, after becoming President in early 1969, had adopted a long-term strategy for the expansion of Mitsui's participation in oil exploration and production. As a part of this strategy, he set up Mitsui Oil Development (Mitsui Sekiyu Kaihatsu) in July 1969, which brought together 17 Mitsui Group companies interested in the oil business. Participation in the bidding for the Lorestan oil was offering the new company its first chance to gain a foothold in the exploitation of overseas oil resources so far dominated by major Western oil companies.

So in July 1970, a Japanese consortium consisting of Teijin, North Sumatra Oil, and Mitsui Oil Development submitted a bid for the Lorestan oil. In November of that year the Mitsubishi Corporation was also brought into the consortium. The reason for this inclusion was that the Japan Oil Development Corporation had originally gone to the Mitsubishi Group with the Lorestan idea and the group had carried out the first study of the oilfield.²⁴

Soon after the submission of a bid by Teijin in July, negotiations over the proposed petrochemical joint venture re-started. During these negotiations many options for the production of various derivatives based on a 300,000 ton ethylene plant were discussed. Wakasugi however, informed the Iranian delegation that Mitsui Bussan had no preconceived idea or experience in such joint projects and both sides needed to work together to produce proposals.

During these discussions, the Iranian team informed Mitsui Bussan that Iran, in order to attract foreign investment into petrochemical and oil industries, would supply gas at only 2 cents per 1,000 cubic feet, and no import duties would be imposed on machinery imported by NPC related companies. Moreover, NPC related companies

would not be subject to corporation tax for the first five years of their operations. Following these discussions, a Japanese technical team left for Iran in February 1971 and began a comprehensive feasibility study in the following spring. This was at a time when the world oil market was entering a new phase.

3.1.1- New Developments in the Oil Markets

In February 1971, representatives of the six oil producing countries of the Persian Gulf and 14 international oil companies met in Tehran, and after lengthy discussions, signed what came to be known as the "Tehran Agreement". This agreement allowed the producing nations to set the oil prices for the first time, and limited to some degree the free reign that the international Majors had enjoyed in the oil markets for a long period. It was from this meeting onward that OPEC members began to demand greater participation in the international oil markets and nationalisation of their oil reserves. So the Tehran Agreement changed the oil markets from a buyer's market to a seller's market almost overnight.

With this change in the oil markets, the Japanese consortium bidding for the Lorestan oil perceived that if the rule of international Majors collapsed, Japan had a chance to forge a direct link with the oil producing countries to ensure stable supplies of petroleum, and that the Lorestan bidding, if successful, would provide Japan with the best chance of achieving this.

The deadline for the bid was 30th April 1971 and, apart from the Japanese consortium, the West German national oil corporation, Denimex, and Mobil Oil were also competing for the Lorestan concession. Denimex, because of the history of close relations between Iran and Germany, was in the strongest position among the bidders.

Apart from the main bid, there were some "annex" conditions which were crucial in determining the success or failure of a bid. The Japanese consortium therefore, concentrated on finding out what the Iranians wanted and what kind of annexes the competitors were prepared to offer. In order to obtain such information, President Ooya of Teijin, a former MITI Minister, asked his close ally and former Prime Minister, Nobosuke Kishi, for help.²⁵ Kishi recommended a company called PR Japan which in turn employed the U.S. consultant, Harry Kahn, who was believed to be close to the Shah of Iran.

The essence of the information gathered by Kahn was that Iran was pursuing a policy of integrating upstream (exploration, production) with downstream (refining, sales) activities, and that if the Lorestan field produced oil, Iran would like to refine and sell the oil jointly with the successful bidder. With this information, the Japanese consortium contacted NIOC to gain more insight into the Iranian demands. Dr Mina, a Director of NIOC, informed the Japanese that the Shah was very keen on direct oil sales to Japan and, moreover, wanted to establish extensive economic co-operation with that country.

However, after further talks with NIOC, Dr Mina informed the Japanese that the Shah, in addition to the basic bid and joint oil sales company, wanted the construction of a petrochemical plant. This was very surprising to the Japanese consortium which had not thought of offering such an inducement to win the bidding. It seems that neither the Japanese consortium nor even the Oil Department of Mitsui Bussan were aware of discussions taking place between the Mitsui Group and NPC on the feasibility of constructing a petrochemical plant in Iran.²⁶

3.2- The Involvement of Keidanren

From 12th to 17th April 1971, a high level Keidanren mission, headed by Uemura, its Chairman, visited Iran. The purpose of the mission was to gain insight into Iranian industrialisation ambitions under the Fourth Development Plan and explore the possibility of Japanese investments there. One member of the Mission was President Ooya of Teijin who was bidding for the Lorestan oil in two weeks time. Before leaving for Tehran, Ooya had persuaded Uemura and the Japanese government to put together a \$100 million loan package so that if the Iranians asked for economic co-operation, the mission would be able to offer the loan.

During their meetings with Iranian officials and NIOC directors, the mission members were informed (apparently for the first time) about the negotiations between NPC and the Mitsui Group over the possibility of establishing a joint petrochemical company which would use Iran's natural resources and export its products to the Japanese market. The mission was told repeatedly that Iran attached great importance to the establishment of this joint venture and needed Japanese capital and technology for this. When Ooya inquired about the project, Mostofi, Chairman of NPC and a Director of NIOC, told him that both sides were soon expected to announce the construction of a plant based on 300,000 to 350,000 of ethylene. He added that the required capital would be around \$300 million which was the main obstacle and he hoped that the mission could help in such an important project.

At the same time NIOC informed the Japanese team in charge of negotiations over the Lorestan oil that the offer of a joint sales company was not enough as an annex and that Iran wanted the construction of a refinery in Japan as well as a petrochemical plant in Iran. The team replied that it needed to consult the companies concerned and

went back to Japan at the same time as the Keidanren mission.

After returning to Japan, the Keidanren delivered its report to the government and informed Mitsui Bussan that Iran was expecting great things from the negotiations over the petrochemical plant. Moreover, Keidanren put a lot of pressure on Bussan to reach an agreement with Iran over the petrochemical project as not only the Lorestan bid but also future investment and trading opportunities for Japan depended on the construction of this plant.

Time was running out for the submission of the bid and Japan was desperate to win the Lorestan oil. President Wakasugi, who knew that the best way to win the bidding was to offer a petrochemical project as an annex, tried to speed up Mitsui's internal study on the project. So he inquired from the General Chemical Department about the feasibility study. He was told that there were problems with profitability and that improvements were being made to the plan which would take until October. After this inquiry Wakasugi concluded that the project was feasible in principle and that he could not wait until October. And so he agreed to add the petrochemical project as an annex.

On 20th April the Japanese consortium bidding for the Lorestan oil went to MITI to discuss their plans. MITI informed them that it was impossible to build a new refinery in Japan with foreign capital as there were already too many international companies present in the Japanese market, but the establishment of a joint oil sales company would be approved. Furthermore, MITI approved the construction of a petrochemical plant in Iran as an annex to the Lorestan bid.

3.3- The Bidding for the Lorestan Oil

On 29th April, the Japanese consortium submitted its bid, signed by the presidents

of the four companies comprising the consortium including Wakasugi of Mitsui Bussan, for the Lorestan oil. The submission, apart from the main bid for the oilfield contained two annexes offering a joint oil sales company and the construction of a petrochemical plant in Iran. The proposal for the petrochemical project had only been described in general terms and contained the following features: a plant consisting of a 300,000 ton ethylene and 400,000 ton aromatic which would begin operations in 1975 with a capital requirement of around \$350 million.

NIOC informed the Japanese consortium that she wanted the construction of a refinery in Iran to process the Lorestan oil for export to Japan now that the establishment of a refinery in Japan had been refused. The Japanese agreed to the building of a refinery in Iran but stressed that export of petroleum products to Japan would be difficult because of MITI's regulation on the imports of processed products.²⁷ This was of course in addition to the construction of the petrochemical project.

However, after lengthy negotiations, on 30th June, NIOC handed over the Letter of Award concerning the rights to the Lorestan oilfields to the Japanese side. At the same time it presented the Japanese with a Letter of Understanding regarding the petrochemical project asking them to sign it by 27th July.

On 1st July, Mitsui Bussan opened its Iran Chemicals Planning Room with Nagae as Managing Director, Tomio as the Head of the room and Sato and others as staff. From then on this group was responsible for all matters regarding the proposed petrochemical joint venture with Iran.

One of the responsibilities of the new team was to obtain finance for the project estimated to be around 120,000 million yen from the Japanese government. After some negotiations, on 26th July the government agreed to finance 70% of required capital by

offering a loan package of 82,800 million yen at 5.25% interest.²⁸ Now the way was open for the Japanese to conclude an agreement with the Iranians over the petrochemical project.

According to Misato, it was a condition of awarding the Lorestan oil that the Japanese side first sign the agreement for the petrochemical project and only then would the Iranians sign the oil deal.²⁹ According to this account of events Ooya, Ikeda (the Vice President of Mitsui Bussan), and Miwa, plus the representatives of all the companies in the Japanese consortium for the Lorestan oil, as well as Tomio and Ikekami from Mitsui's Iran Chemical Room went to Iran to sign both agreements. On 27th July, Ikeda, Mostofi (the NPC Chairman), and Dr Mina signed the Letter of Understanding at the NPC headquarters. The Japanese group then went straight to the NIOC offices, where the Lorestan oil agreement was formally signed.³⁰

Dr Mostofi however, disputes this accounts of events and states that no such condition was placed on awarding the Lorestan oil. Moreover, he adds that the Japanese, from the very beginning, were offering the petrochemical project as an inducement to win the bidding for the Lorestan oil, and in no way were they forced or tricked into offering the project as Misato alleges.³¹

On 4th October, the four companies so far involved in the proposed petrochemical project, Mitsui Bussan, Toyo Soda, Mitsui Toatso, and Mitsui Petrochemical, reached an agreement between themselves to set up a new company which would assume all the rights and responsibilities granted to Mitsui Bussan stipulated in the Basic Agreement proposed by NPC. The new firm was to be the investing company on the Japanese side with NPC being the investing arm of the Iranian side.

According to Misato, of the three chemical companies, only Toyo Soda had been

interested all along in the project, and the other two only agreed to join the project under pressure from Mitsui Bussan. Bussan, being a general trading company, needed the co-operation of the three chemical firms to provide manufacturing know-how and personnel and, in fact, would have been unable to pursue the project alone. The same was true of the Iranians who had no technology of their own or trained personnel and, moreover, knew that if only Mitsui Bussan was involved in the project, there was no possibility that the plant would ever be built. So Iran stipulated in the draft Basic Agreement that Mitsui Bussan should involve Japanese chemical companies.

The Basic Agreement (B/A) was signed on the 19 October between the four Japanese companies on one side and NPC on the other. The Agreement provided for the establishment of a petrochemical company on a 50-50 basis between the two sides under Iranian laws.

On the 24 December, based on the four Japanese' companies agreement, the Iran Chemical Development Company (ICDC) was established which was to act as the investing arm of the Japanese side in the new joint venture with NPC. The capital participation of ICDC was: Mitsui & Co. 49%, Toyo Soda 31%, Mitsui Toatsu 15%, and Mitsui Petrochemical 5%. Moreover, it was decided to make 10% (9% from Mitsui & Co. and 1% from Toyo Soda) available to another company in the future should one come forward.³²

Furthermore, on 28 September, the Iran Oil Company, the new Japanese company for the Lorestan oilfield, was founded by the Japan Petroleum Development Corporation and the four other companies who had made the bid, i.e. Teijin, Mitsui & Co., North Sumatra, and the Mitsubishi Corporation.³³

As the Iran Oil Company lacked the required drilling technology, on the

recommendation of NIOC, Mobil Oil was brought in to carry out the drilling in exchange for 33% of the Japanese company's profits. Moreover, on 8th November 1971, the new agreement for the Lorestan oil was signed between NIOC (which according to Iranian laws was a party in the joint venture),³⁴ the Iran Oil Company, and Mobil Oil. Finally, in March 1972, the Iran Nippon Petroleum Exploration Company (INEPCO) was set up by the three companies to search for oil in Lorestan.

3.4- Details of the Basic Agreement

The Basic Agreement placed certain obligations on both sides, some of the most important of which were: the Japanese side was to organise long term loans of \$230 million from the Japanese government and banks for the joint venture; they were also required to train Iranian personnel for the project and arrange for the transfer of technology and, moreover, export the project's products that were surplus to domestic consumption.

On the other hand, the Iranian side undertook to supply all of the project's raw material and energy needs like natural gas, LNG, naphtha, and water (a huge amount of which was required). They also agreed to co-operate with the project in establishing the necessary infrastructure. Moreover, under the Attraction and Protection of Foreign Investment Law, the Majlis which ratified the Basic Agreement on 22 October 1972, granted the joint venture full exemption from import duties and other benefits due to foreign investment.

The Basic Agreement laid the ground for the establishment of a joint venture between NPC and the four Japanese companies in the form of a "private limited company" under Iranian law. According to the Agreement, the joint company was

authorised to "produce, transport, market, and export various olefines, aromatics, soda caustics and their derivatives and by-products".³⁵

3.5- Problems Within the Japanese Side

Even though by signing the Basic Agreement, the Japanese companies had committed themselves to the joint venture for a minimum period of 30 years, there still existed some apprehension on their side over profitability of the project, and they were seeking a revision of the construction plan.³⁶ These problems were exacerbated by the internal differences within Mitsui Bussan over the joint venture.³⁷ The main problem was that the company's department responsible for the project was unenthusiastic about it. The fact was that the department was at the same time involved in planning another petrochemical project in Thailand. This project had been conceived within the department itself and had received approval from the top management. In contrast, the Iranian project had been imposed upon the department by the top management and hence, did not enjoy the wholehearted support of the Chemicals Department's personnel. The attitude of the department, therefore, was to go slow on the Iranian project, while vigorously promoting the Thailand venture. As a result of this attitude, the staff working in the Iran Chemical Room were being increasingly isolated within the Chemicals Department.³⁸

Apart from internal conflict within Mitsui Bussan, there were also disagreements between the three chemical companies over the production policy of the new joint venture and the presence of the non-Mitsui Group, Toyo Soda, in the ICDC.³⁹ These differences within the Japanese side, especially the former, caused many problems for the new company and delayed the start of construction for at least a year.

Along with the confusion brought about by the arguments within the Japanese side, protracted negotiations between NPC and ICDC over the production policy, price of natural gas and financing of the joint venture were continued without reaching any solution. Nonetheless, as required by the Basic Agreement, the Iran Japan Petrochemical Company (IJPC), a joint venture between ICDC and NPC, was established in April 1973. So IJPC was set up even before the above three major issues had been resolved.

Just before the establishment of IJPC, the Japan Synthetic Rubber Company bought 5% of the Shares of ICDC and hence became the fifth Japanese company in the joint venture. The main reason for the company's participation was that it wanted to export the intermediate products needed for the production of SBR by IJPC to Iran.⁴⁰

4.0- The Formation of IJPC and the Construction Period (1973-1978)

The period from 1973 to 1978 were the only years in the entire life of the joint venture (1968-1989) during which construction of the petrochemical complex took place. Even so, from 1973 to 1976 no construction, apart from ground levelling and land reclamation was undertaken. In fact it was from 1976 to 1978 that the actual building of plants took place. By the end of this period, which was interrupted by the Iranian Revolution, 85% of the construction and 65% of the work schedule had been completed.

4.1- Capitalization and Financial Arrangements of IJPC

The progress of the project during the 1973-1978 period was within the framework of the Basic Agreement and with the understanding that the project was feasible.⁴¹

In this period, the estimates of costs for the implementation of the project were increased several times, so much so that the initial sum which had been estimated at

around \$358 million in the Basic Agreement reached \$2480 million in 1978. The main factors for this seven-fold increase in the estimated costs were new feasibility studies which showed that the initial studies had underestimated the true costs, addition of new plants and facilities, fluctuations in the value currencies (especially U.S\$ vs yen), delays in the completion of the complex, postponement of the start of operations, swelling of the volume of loans due to delays in their repayment, and the four-fold rise in the oil prices in 1973.

Moreover, during this period, the only sources of finance for the IJPC was the shareholder's paid-in capital, loans from the shareholders, and suppliers credits. Lastly, the main expenditure for this period were payments to the contractors.

4.1.1- Initial Forecasts of the Required Capital (Plan A)⁴²

Under the provisions of the Basic Agreement of 1971, the required capital for the construction of various plants of the IJPC petrochemical complex was estimated to be around \$358 million, equivalent to 128.8 billion yen (\$1 = Y360). (For the details of the Plan see Table 7.1). In addition, the main sources of finance, as mentioned above, were the shareholders and supplier credits as summarised in Table 7.2. Under the provisions of the Basic Agreement, loans amounting to \$230 million (Y82,800 million) were to be supplied to the joint venture in the following manner: part of the loan was to be secured through a long-term loan from the Japanese government to the Iranian government, and the other part by a long-term loan from the Export-Import Bank of Japan and other Japanese banks on the condition that they would be spent on the purchase of Japanese goods and services. Moreover, another \$28 million in the form of an export credit, was

to be supplied by Japan with the same condition.

Overall, both partners were to provide loans in equal proportions to the joint venture with the provision that the Iranian partner would supply the rial part of the loans and the Japanese partner the foreign currency part. In addition, the latter was to arrange for the former to receive loans in foreign currency (mainly yen) for its contribution to the company. Finally, government to government loans were to be considered as the Iranian side's share of the loans even though they were supplied by the Japanese government. The rate of exchange for the above loans was to be fixed at \$1 = Y360, and \$1 = IR75.75.

Table 7.1: The Production Capacity of Units Under the Four Plans

	Plan A \$358m Y130b	Plan B \$942m Y330b	Plan C \$1833m Y550b	Plan D \$2567m Y655b
Unit/ Product	Capacity Ton/Year	Capacity Ton/Year	Capacity Ton/Year	Capacity Ton/Year
NF Ethane LPG Pentane Hexane	300,000	1,500,000	184,200 1,500,000 412,000 152,000	1,900,000
OL Ethylene Propylene Butane By-Pro'ct Pentane/mix Buthadene	300,000 128,000	300,000 128,000	332,100 114,100 77,200 70,900 57,000	320,000 120,000 25,000
CA Chloride Soda	240,000	240,000	231,900 262,000	250,000
EDC/VCM EDC VCM		150,000	294,000	300,000 150,000
SEA SALT			397,000	500,000
LDPE	100,000	100,000	100,000	100,000
HDPE	30,000	60,000	60,000	60,000
PP		50,000	50,000	50,000
BD	24,000	25,000	25,000	
SR		40,000	40,000	40,000
AR Benzene Xylene Naphtha LPG	230,000	145,000	351,000 144,000 207,000 98,000	350,000 140,000
SM		100,000		

CM				
Cumin	150,000	150,000		
Ethylene Glycol	50,000			
Ethylene Benzene	200,000	115,000		
PX				
Para Xylene		100,000		
Orth Xylene	20,000	20,000		

Source:

Plans A & B: Records of Board of Directors Meeting, 15/7/1992, File I.A.C, p.8

Plan C: Master Budget, 1976, File I.A.K.

Plan D: An Analysis of the Problems of the Iranian Petrochemical Industry, NPC, (July 1981).

Table 7.2: Sources of Finance

	Iranian Partner			Japanese Partners		
	\$m	Ym	%	\$m	Ym	%
Paid in Capital	25	9.0	7	25	9.0	7
Shareholder's Loans	25	9.0	7	25	9.0	7
Sub-Total	50	18.0	14	50	18.0	14
Supplier's Credit	80	28.8	22	150	54.0	42
Export Credit (Japan)	--	--	--	28	10.08	8
Total	130	46.8	36	228	82.08	64

Source: Bandar Imam Petrochemical Company, March 1993.

4.1.2- Cost Increases and the Draft of Plan B (1974)⁴³

Due to the imposition of an oil embargo by the Organisation of Arab Petroleum Exporting Countries (OAPEC) on the Western oil consuming countries and the emergence of a sellers' market, petroleum prices rose by nearly four-fold in late 1973/early 1974. This was followed by spiralling inflation in the world particularly in the industrialised countries. (In fact inflation in the West had been rising steadily since the late 1960s and was a major factor in OPEC's demands for higher oil prices).

The rising inflation, addition of new facilities and increases in the capacities of plants, overoptimistic estimates in earlier feasibility studies, and a long delay from the signing of the Basic Agreement to the establishment of IJPC, rendered the calculations of Plan A invalid. New studies showed that construction costs had risen to \$942 million or Y282,500 million (\$1= Y300). So a new plan called Plan B was drafted which took into account the above factors. (See Table 7.1 for details of the Plan). However, for various reasons this plan was never implemented and, hence, no attempts were made to find extra sources of finance for the Plan.

4.1.3- Plan C⁴⁴

In 1974 tender offers for the construction of various plants and facilities were sent out to qualified contracting companies. When the bids from the contractors were received, IJPC management realised that the bid prices were about three times higher than their own estimates. After this development, new studies were carried out which revealed that the total construction costs would be around \$2480 million or Y744 billion. The Japanese partners, however, refused to invest such a huge amount of money in the project. In order to overcome the Japanese objections, the Iranians agreed that: first, the

\$358 million investment needed for the gathering and transit of natural gas from the oilfield to the complex site would be carried out by NIOC; and second, the construction of four plants (PX,CM,SM,VCM), which were a lower priority compared to other plants and whose total construction cost were about \$261.1 million, would be cancelled. With the elimination of these projects, total construction costs were reduced to Y587,676 million.

With regard to the resolution approved by IJPC's Extraordinary General Meeting on 1st August 1975 and the agreement between the MITI Minister and Iran's Minister of Economy in January of that year, the Company's Board of Directors, in its 30th August 1976 meeting, approved the Y550 billion yen budget for the construction of the petrochemical complex.⁴⁵ Although this budget was actually Y587 billion, it was always known as the Y550 billion budget (Plan C). (For details of the Plan see Tables 7.1 and 7.3).

4.1.3.1- Sources of Finance

The huge increase in construction costs from Y130 billion (Plan A) to Y550 (in fact Y587) billion necessitated the finding of new sources of finance for the implementation of Plan C. So the EGM of 1st August 1975 raised the paid-up capital to Y100 billion and authorised the Board to borrow up to Y450 billion (total of Y550 billion).

During his visit to Iran in January 1975, the MITI Minister had acquiesced to providing around Y250 billion for the project. At the same time, the Iranian government agreed to provide Y200 billion in loans to the joint venture (see Table 7A for details). With the provisions of the above loans, a new budget was approved by the Board of

Directors of IJPC on 30 August 1976.⁴⁶ The sources of finance for the implementation of Plan C are shown in Table 7.5. (for technical details of Plan C see Table 7.1).

Table 7.3: Changes in the Budget from 1976 to 1978

	Plan C (1976)	(1977)	Plan D (1978)
Design and Construction Costs	Million Yen	Million Yen	Million Yen
NF Unit	29,256	29,256	29,256
OL Unit	48,413	48,413	48,413
CA Unit	53,904	53,904	53,904
LDPE Unit	28,370	28,370	28,370
HDPE Unit	16,765	16,765	16,765
PP Unit	20,180	20,180	20,180
BD Unit	8,189	8,189	8,189
SR Unit	21,060	21,060	21,060
AR Unit	36,740	36,740	36,740
VCM Unit	--	17,432	17,432
Services	47,581	47,581	47,581
Facilities	117,259	120,728	122,259
Sub-Total	427,717	448,618	450,149
Licence Fees	7,093	7,093	7,093
Ground Levelling	47,504	47,504	47,504
Administrative Expenses	40,706	41,978	49,057
Head Office Expenses(Teh)	6,200	6,200	12,857
Interest Payments	58,456	61,449	72,277

Technical Training	--	6,340	6,340
Various Expenses	--	1,000	1,000
Trial Operations	--	--	27,570
Less sales of Products	--	--	18,267
Total	587,676	620,182	655,580

Note: As mentioned in the text, in December 1977 the budget for Plan C was increased from Y578 billion to Y620 billion. However, with the addition of new facilities, Plan D with Y655 billion was executed, and hence the Y620 billion budget was never realised. Source: BIPC, March 1993.

Table 7.4: New Sources of Finance As Approved by LJPC GM (1/8/1975)

	Billion Yen	Million Dollar	Million Rial
Yen Loan	28.8	96.0	6,480
Suppliers' Credit	54.0	180.0	12,150
Direct Loan	117.2	390.6	26,366
ICDC Loan	50.0	166.7	11,252
Total Loans from Japan	250.0	833.3	56,248
Iranian Loans	200.0	666.7	45,002
Total loans	450.0	1500.0	101,250

Source: BIPC, march 1993.

Table 7.5: Sources of Finance for Plan C (The Y550 billion Budget, 1975)

	Total		Iranian Partner			Japanese Partners		
	\$m	Yb	\$m	Yb	%	\$m	Yb	%
Paid in Capital	333	100	166.5	50	9.1	166.5	50	9.1
Shareholder's Loans	1083.4	325	666.4	200	36.4	417	125	22.7
Direct Loan	200.0	60	200	60	10.9	--	--	--
Yen Loan	96	28.8	96	28.8	5.2	--	--	--
Export Credit	120.6	36.2	--	--	--	120.6	36.2	6.6
Total	1833	550	1228.2	338.8	62	704	211.2	38

Note: In this table the following rates of exchange have been used:

Y100 = IR22.5

\$1 = IR67.5

\$1 = Y300

Source: BIPC, March 1993.

4.1.4- Plan D (1977)

Just before the start of construction of the complex, NPC informed ICDC that due to rise in domestic demands for P.V.C, the V.C.M unit which had been dropped in Plan C should be reinstated. The addition of the new unit plus increases in expenditure for training, infrastructural facilities and payment of additional interest on loans resulting from delays in the start of operations, necessitated drawing up a new plan. Therefore, in December 1977, the total budget was raised from Y550 billion to Y620 billion and, a year later, in the last full Board meeting (November 1978) during the Shah's regime, the total budget was increased to Y655 billion (Plan D). Technical and financial details of this Plan are shown in Tables 7.1 and 7.3.

4.1.4.1- Sources of Finance for Plan D

In order to meet the increased construction costs due to the addition of new units and other expenditure mentioned above, in its November 1978 meeting, the Board of Directors decided to ask shareholders to extend new loans to IJPC, raise the paid in capital, and seek finance from outside sources. The sources of finance for the implementation of Plan D are shown in Table 7.6.

Table 7.6: Extra Sources of Finance for the Implementation of Plan D (November 1978)

	Total (Ym)	Iranian Partner (Ym)	Japanese Partner (Ym)
Extra Amount Required	120,226		
Increase in Capital	26,504	13,252	13,252
Loans from Various Sources	50,000	50,000	--
Shareholder's Loans	43,722	21,861	21,861
Total	120,226	85,113	35,113

Note: Records of the Board of Directors of IJPC meeting, November 1978.

4.1.5- Sources of Finance from 1973 to 1979

All sources of finance for the period under discussion, i.e. from the establishment of IJPC to 1979, just after the Iranian Revolution, when construction came to a halt, are summarised in Table 7.7. It is, however, important to mention few points. First during that period, especially in the earlier years, due to lack of a comprehensive business plan, Japanese banks and particularly the Export-Import Bank of Japan, were refusing to extend long-term loans to the joint venture. In order to pay for expenses, NPC extended loans totalling IR4913 million to IJPC on the condition that they would be repaid as

soon as long-term finance had been secured. Moreover, due to ever increasing costs and frequent changes in construction plans, IJPC faced constant shortages of funds which were temporarily alleviated by the provision of bridging loans or short-term loans from the shareholders. In fact, at the time of the stoppage of construction in early 1979, the company had completely run out of money and this is believed to have been a major factor in the Japanese partners' reluctance to resume construction later on that year.

Furthermore, lack of success in securing long-term finance caused long delays in the start of construction in the mid-1970s. This was not only due to reluctance of Japanese banks to extend loans, but also because of disagreement between Iranian government officials over loan guarantees. H. Ansari, the Iranian Finance Minister, was arguing that although more than half of the finance was to be raised in Japan, Iran was being asked to carry a higher proportion of liability and, in effect, guarantee the Japanese partners' share of the loans.⁴⁷ This arrangement, in his opinion, was contrary to the principle of 50-50 participation laid down in the Basic Agreement. Based on this argument, Ansari refused to provide guarantees for loans which caused delays in the start of construction for well over a year. The issue was finally resolved when Kawamoto, the MITI Minister, visited Iran from 5 to 7 January 1976.⁴⁸ Ansari's objections appear to have been a part of personal rivalry between him and Dr Mostofi, the Chairman of NPC and IJPC.

Considering the preceding discussion it becomes clear that neither partners had a comprehensive strategy towards the joint venture. This is especially true when one considers the issue of capitalization which should have been settled before the start of construction and even before signing the Basic Agreement in 1971. This problem was so acute that the project frequently ran out of money and, as discussed above, IJPC had to

turn to its parent companies for short term funds to continue the construction. This problem had major consequences for the joint venture in that its completion was delayed for a few years because of inadequate capital.

Table 7.7: Various Loans Received By IJPC, 1976-1980 (In millions of rials)

Type of Loan	Interest Rate	1976	1977	1978	1979	Total	1980
NPC Loan	10.0%	5643	19706	22457	2247	47976	--
ICDC Loan	8.35%	4018.7	8515	14888	11280	38702	--
Yen Credit ¹	4.0%	--	2372	6005	54.5	8431	--
Direct Loan ²	10.3%	--	6719	9687	1109	17515	15.1
Suppliers' Credit	6.77%	--	2373	9010	301	11684	--
IRNIH ³	11.0%	--	--	--	670	670	--
Short Term Loan	--	--	--	9869	--	9869	--
Total in Rials	--	7583	39688	71916	15661	134847	15.1
Total in Yen	--	31612	134113	197049	47656	410430	43

Notes: 1- Loan from the Japanese government to the Iranian government.

2- Loan from the Export-Import bank of Japan to NPC.

3- Loan from Iran Nippon Houses to IJPC.

Source: BIPC, March 1993.

4.2- The Organisational and Managerial Aspects (1973-1978)

Formally, the organisation and management of LJPC throughout its life were according to the rules laid out in the Article of Association of April 1973 and the Basic Agreement (B/A) of October 1971. Under these rules, the Board of Directors of LJPC was made up of twelve members,⁴⁹. The B/A stipulated that both partners would have equal voting rights on the Board and, therefore, half of its members would be appointed by NPC and half by Mitsui & Co.(later ICDC).⁵⁰ Under the provisions of the B/A, for the first seven years after its establishment, the Chairman and the Deputy Managing Director of the Company would be appointed by NPC, and the Deputy Chairman and the Managing Director by Mitsui & Co. (ICDC). Thereafter, for five year terms, these appointments would be alternated. Moreover, it was agreed that for the first five year term after the initial seven year, the Deputy Chairman and the Managing Director would be appointed by NPC.⁵¹ Table 7.8 shows the names of the 12 persons who were appointed as President of the joint venture from 1973 to 1990.

The essence of the Basic Agreement and the Article of Association was that both partners would be equal in all respects and would have an equal say in the running of the company. But as we shall see later, this was not the way the Japanese perceived it. They wanted to run the joint venture in a "Japanese Way", with no input or "interference", as they saw it, from the Iranians.

Table 7.8: IJPC's Managing Directors since 1973 to date

	Name	Position	Notes
1	K. Tomio	M.D	From 1352 to 31/2/1358
2	Adachi	M.D	31/2/1358 to 16/5/1359
3	H.M. Ghashghaii	Deputy M.D	*
4	K. Amini	Deputy M.D	*
5	N. Koohyaar	Minister of Oil's Representative & Deputy Chairman	*
6	H. Dabiri	M.D	16/5/1359 to 5/12/1360
7	M. Kamali Taghavi	M.D	5/12/1360 to 24/1/1361
8	A. Ahmadi	M.D	24/1/1361 to 19/9/1363
9	M. Ehtiati	M.D	19/9/1363 to 2/2/1366
10	A. Montazeri	M.D	2/2/1366 to 16/7/1366
11	M. Javadian	M.D	16/7/1366 to 5/7/1368
12	H. Aminfar	M.D	5/7/1368 to 15/8/1368
13	M. Mirmoezi	M.D	15/8/1368-

Note: *- Due to prevailing circumstances (the war) the Managing Director's authority had been greatly limited and the running of the company and decision making had been vested in a few directors, including those in 3, 4, and 5.

Source: Various announcements by the IJPC (BIPC) in the Official Newspaper of Iran.

4.2.1- The "Japanese Way" of Management

The institution of Japanese management style at the highest level of the organisation and for the overall administration of the joint venture was one of the features of the 1973-78 period. This style of management was supposed to be based on "mutual confidence" between the two partners with the Japanese side being in full charge of the construction of the project without any interference from the Iranians. Another aspect of this method of management was "Consensus Decision Making". This method, apparently, was not only practiced between the partners for making decisions, but also throughout the whole organisation from the highest to the lowest levels.⁵²

It is very important to point out at this juncture that during the 1973-78 period, IJPC was essentially a construction company with the sole aim of completing the project according to various plans drawn up by the partners. In this respect, the department in charge of construction was the most important department of the Company and this was the area where the Japanese partners were most insistent upon employing the "Japanese Way" and hence holding a tight control over the joint venture.

IJPC was to be the biggest petrochemical complex in the world comprising 16 units plus various service and infrastructural facilities. As such, its construction was too big to be handled by a single engineering firm. Moreover, neither the Iranian nor Japanese partners, including the three petrochemical companies, had any experience of building such large complexes. Furthermore, Mitsui Bussan, according to its President, Wakasugi, being a trading company, had never handled any project of this size, and wanted to complete the project with the full co-operation of all partners, including the Iranians.⁵³ However, for the reasons discussed below, the Japanese were not prepared to allow Iranians to have a say in how the construction plans should be executed. And

this was where some of the most important differences and feelings of ill will between the two partners emerged which in turn caused many delays in the completion of the project and the eventual demise of the joint venture. As the construction of the project was the most important activity that the joint venture undertook in this period and as this was the area where differences between Japanese and Iranian management styles emerged, in the next section, we will discuss in detail the contracting system employed for the construction of the project.

4.2.2- The Construction of the Project in a "Japanese Way"⁵⁴

As mentioned before, the project was too big to be handled by a single engineering company and therefore, several firms had to be employed to build the complex. After lengthy negotiations between NPC and ICDC in late 1972 over the mode of execution of the project, it was decided to employ a "prime contractor" on a turn-key basis for a lump sum and put it in overall charge of the engineering firms (the subcontractors which would be building the complex, as was (is) the norm in the world. The next consideration was which company to choose as prime contractor. Mostofi favoured employing the American Bechtel Company, but as most of the individual plant engineering companies and specialised subcontractors were Japanese, ICDC favoured using a Japanese prime contractor in the interest of greater harmony and communications.

In early January ICDC espoused the idea that Mitsui Bussan should become the prime contractor on the grounds that no other Japanese company was interested as the risks of cost overruns for such a large project were quite high. There were however two problems with this idea. First, Bussan was a trading not an engineering company, and second, there was the possibility of conflict of interests as Bussan would be both the

owner and contractor. Mitsui Bussan's Chemical Machinery Department, which for obvious reasons was extremely keen on being appointed as the prime contractor advocated the idea of "managing contractor" (MC), with the responsibilities of the prime contractor but whose function would be limited to management. Eventually, as Mitsui Bussan was the biggest shareholder in ICDC and the project leader, and ICDC wanted to complete the project in a Japanese way, and Bussan was the only Japanese company big enough to take on a project on such a large scale on a lump sum basis, no serious objections were raised from the Japanese partners. NPC also agreed in principal to Mitsui Bussan acting as the prime contractor. NPC however, demanded that the MC (Bussan) set up a daily reporting system so that there would be owner control over the contractors. But probably a more important motive behind this demand was that the Iranians wanted to learn about building large industrial projects and, in fact they considered the joint venture not just as a way of developing the petrochemical industry but as a means of transfer of technology. The latter was their explicit and implicit aim in coveting foreign investment. But the Japanese were worried that intervention by the Iranians would upset the smooth progress of the work and that was why they were insisting on constructing the project in a Japanese way.

The appointment of Mitsui Bussan as the prime contractor (MC), however, not only did not facilitate better co-operation and communications, but actually became a source of contention between the partners, even among the Japanese themselves.

The main cause of friction was the attitude of the Chemical Machinery Department of Bussan which was acting as the MC. The Department's primary concern as the MC was to make as much profit as possible, and in fact it considered the project just as a "cash cow to be milked dry".⁵⁵ The MC's behaviour was also causing problems

with the contractors, as it was directing them to order plants and machinery through the Department, a job always done by the contractors themselves. In fact the MC was so preoccupied with profits that in 1974 it predicted it would make as much as Y6000 million profits from the sales of machinery to IJPC in the next 2 to 3 years.⁵⁶ The conduct of the Chemical Machinery Department towards the joint venture finally persuaded the partners to drop the idea of Mitsui Bussan as the prime contractor in March 1975.

Around the same time, Mitsui & Co.'s staff working for IJPC and ICDC proposed the "capital withdrawal" theory by which the company would withdraw from the project as an investor but would continue as a contractor, a route similar to the one taken by Allied Chemical in the Shahpour Chemical case. But this course of action was sharply rejected by President Ikeda of Bussan.⁵⁷

So nearly two years after being established, IJPC was still without a prime contractor. Literally, doing things in the "Japanese way" meant nothing more than allowing the Japanese to run the project as they wished and make as much profit from it as possible. "Bussan's overriding concern in the whole project had been to increase its business; it thought that it could just second a few people to the project and that everything would be muddled through after that".⁵⁸ This was not only evident in Bussan's concern with short term gains, but also, in the overall attitude of the company towards the joint venture. Although the project was the biggest that Mitsui Bussan had ever participated in, there was no person or department with the overall responsibility for co-ordinating policy toward the joint venture. And, as mentioned before, the Chemical Products Department was treating the project with contempt, regarding it not as their own but as the "President's pet".⁵⁹

This attitude of Mitsui Bussan's was not out of character for general trading companies' towards foreign investment or international joint ventures in general. As explained in Chapter Five, the main concern of sogo shosha is trading, and all other functions that they undertake, like manufacturing, foreign investment, etc, serve one purpose only: to increase their trading volume. Moreover, as noted in Chapter One that the general trading companies, or other Japanese companies for that matter, undertake foreign investment in order to acquire the right to sell plants, machinery, and services to and purchase the output of their overseas subsidiary (whether they are a minor or major shareholder in the joint venture), and this is the area where they make most of their profits. As explained in that chapter, the Japanese investors are not concerned with making profits on their foreign investment in the form of dividends as long as such ventures provide them with lucrative trading opportunities.

4.2.2.1- Adoption of a New Construction System

After the debacle of the MC system, the Japanese proposed a new construction system. Under the new system, the Construction Department of IJPC would be reorganised into various offices responsible for the progress of work on each maker's manufacturing plant. Then one engineering company would be nominated to head the construction of each plant unit.⁶⁰ The contracts were to be mostly lump sum, with works for linking the units being on a cost plus fee basis.⁶¹

This method of construction would allow the Japanese to determine the construction system and construction work and therefore, would require Japanese leadership and shut out the Iranians from the management structure.⁶² Mostofi, however, stated that an outside company should be employed as a consultant to keep a

check on the contractors, as was (is) the practice in Iran, and he suggested the Lummus of U.S for this purpose. The Japanese, however, rejected this suggestion on the grounds that in Japan it is the construction department of the owner firm which keeps an eye on the contractor which is much cheaper than hiring an outside company.

Some Iranian members on the Board of Directors had strong reservations about the new system, arguing that the Japanese were trying to shut them out of the decision making and that the "Japanese Way" had not been clearly defined. But Mostofi, who believed that the project was well behind schedule and time was running out, accepted the Japanese argument that their way was based on "mutual trust" and agreed to the new construction system on 4 May 1975. His decision seems to have been prompted by the Shah who wanted the project to be completed as soon as possible.⁶³

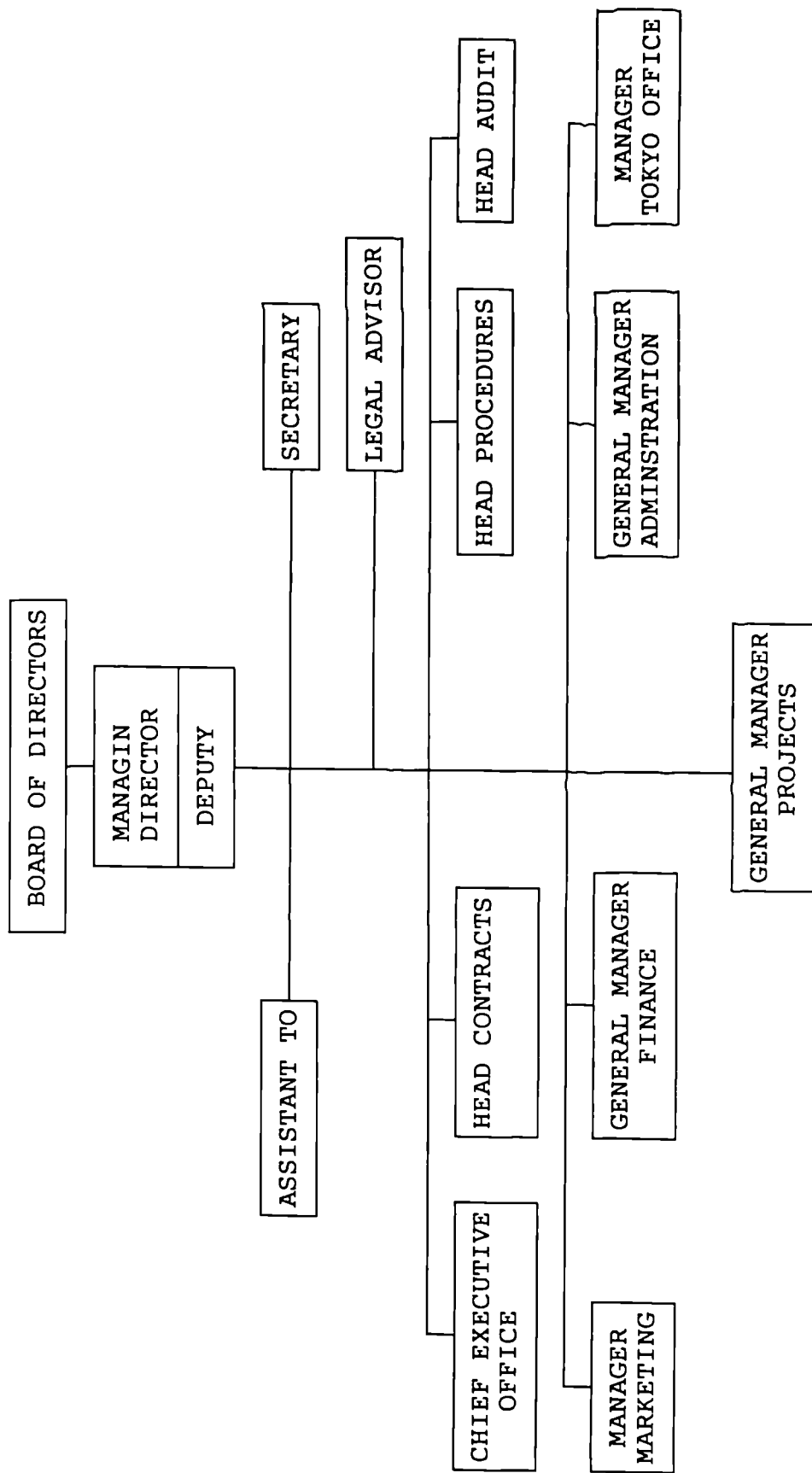
4.2.3- The Organisation of IJPC

The organisational set-up of the joint venture, during the construction period (1973-78) is shown in Exhibits 7.1, 7.2 and 7.3. In this period, as mentioned before, the Managing Director and the Senior Executive Director (in charge of construction) were appointed by the Japanese. However, as these exhibits demonstrate, the influence of the Japanese partners pervaded the entire organisational structure of the company. Apart from controlling the Executive Office (the most important department in this period), the Japanese also controlled almost all other important offices like strategic planning, marketing, finance, and legal affairs.

During the 1973-78 period there were about 300 managers, engineers, and experts working in the Chief Executive Office, mainly in the Tokyo Office. Apart from the Senior Executive Director in charge of the Office, all other senior and even junior positions

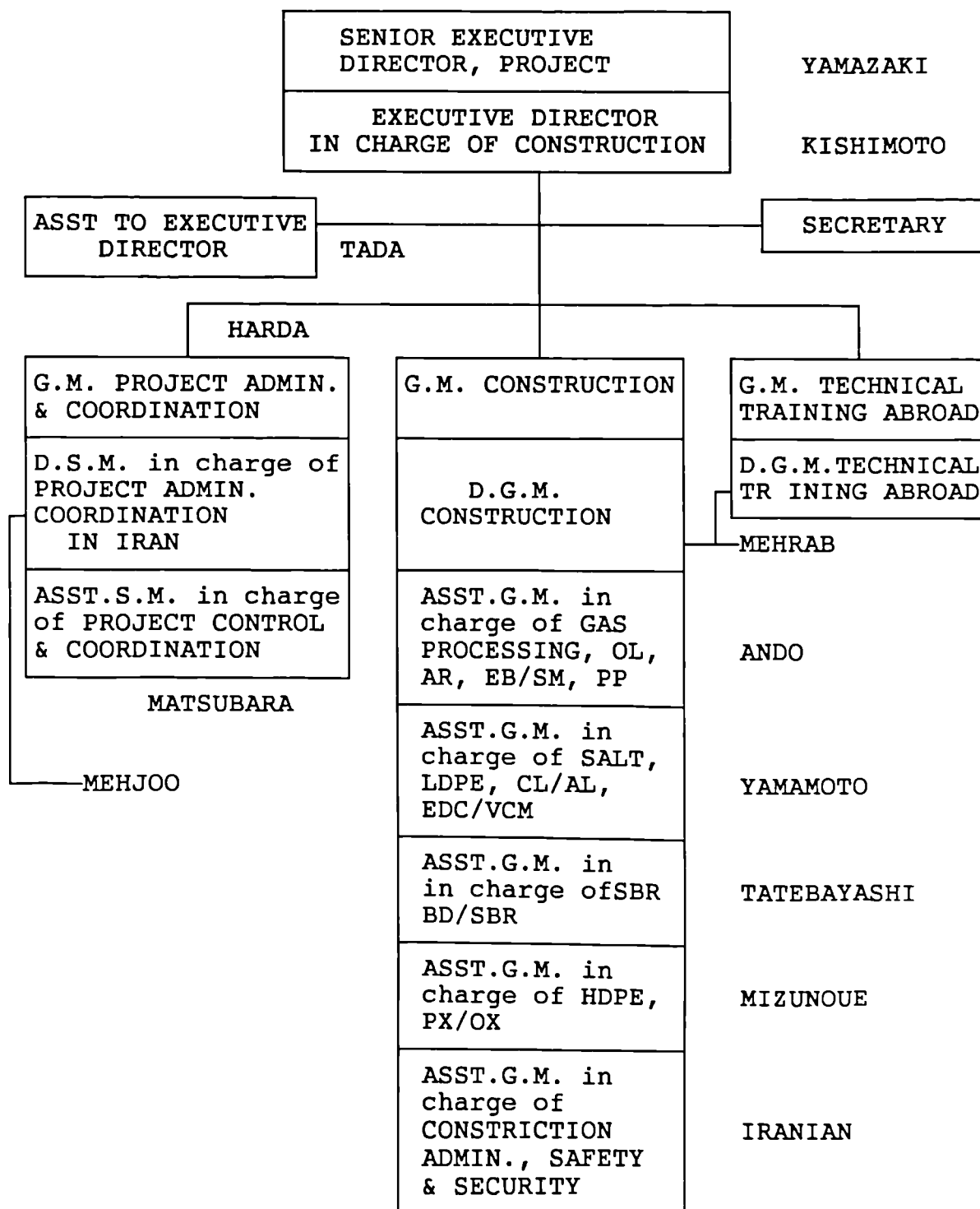
were held by the Japanese. There were only 10 Iranians at this Office with only nominal positions and no real responsibility [window managers]. What was particularly disturbing to the Iranians was the fact that these people were some of the most experienced NPC engineers.⁶⁴ Moreover, these engineers were sent back to Iran at the end of 1976 on the grounds of high costs. This happened just before the start of detailed engineering studies which was a good opportunity for them to learn about the project.⁶⁵

Exhibit 7.1: The Organisational Chart of IJPC During the Construction Period



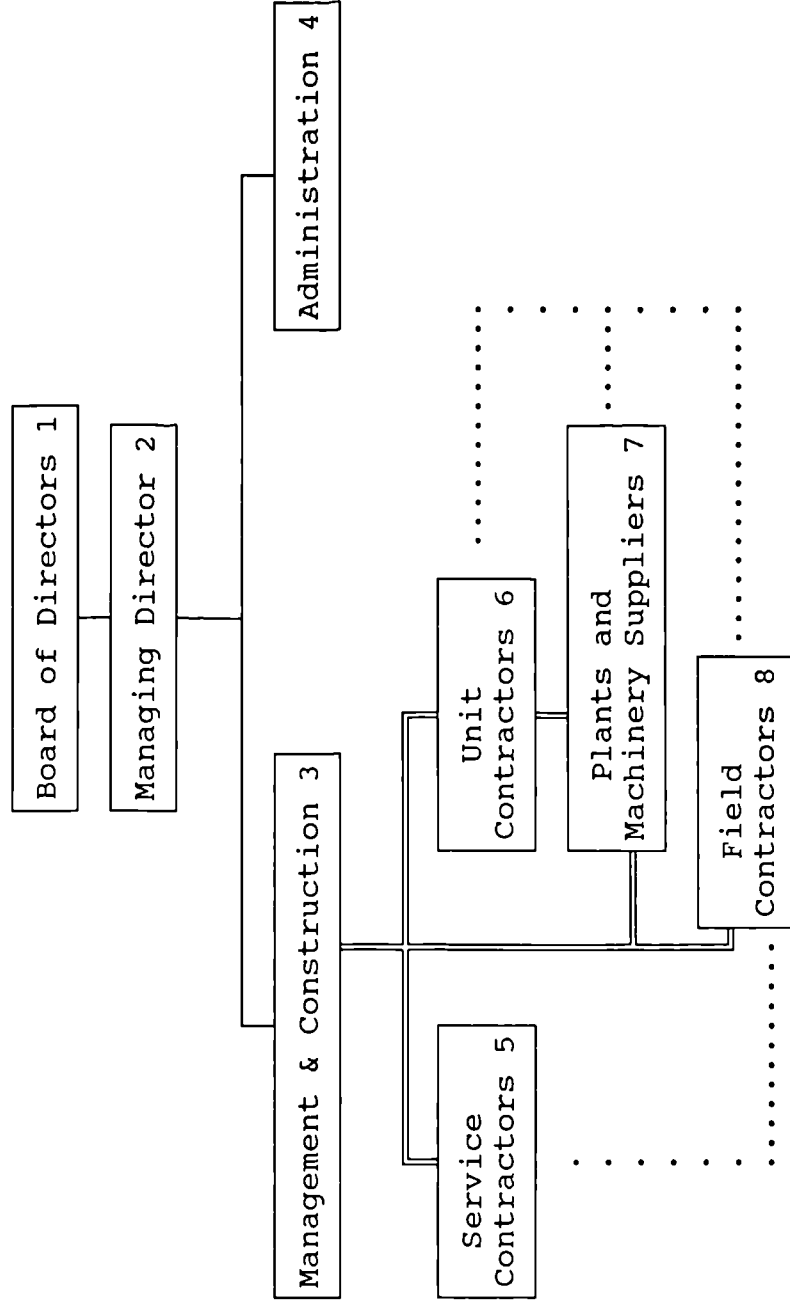
Source: Organization Affairs, National Petrochemical Company, July 1974.

Exhibit 7.2: The Organisational Chart of IJPC



Source: National Petrochemical Company, July 1974.

Exhibit 7.3: The Permeating Japanese Control over the IJPC Project



== : Contractual relation

.....: Working relation

Notes:

1- Equal number of Iranian and Japanese Directors on the Board. But as the Japanese Directors occupied all the executive positions, they exercised effective control over the top management and the entire company.

2- The Managing Director was Japanese and his Deputy Iranian.

3- The Executive Director and the 400 personnel in the Construction Department who were in overall charge of construction and the project were Japanese. Their responsibilities included: the management and organisation of the project, negotiations with all contractors and awarding of contracts, drawing up and control of the budget, planning, and co-ordination of services.

4- All the senior and sensitive positions in the Finance, Administration, Legal, Sales and Marketing were occupied by Japanese personnel.

5- All the Service Contractors were Japanese companies which provided all the required services during the construction period, such as: the management of camps, restaurants, repairs of construction plants and machinery, loading and unloading of ships and other harbour facilities, land transport, etc.

6- There were four Unit Contractors, all Japanese companies. Their responsibilities were: design and engineering services of all units, procurement of all plant, machinery and other materials (through Mitsui Bussan), planning, management and co-ordination of units' construction.

7- All plants, machinery and other materials required for the construction of the petrochemical complex were supplied by Japanese companies.

8- All field contractors, with the exception of a few Korean companies which carried out small construction jobs, were Japanese companies. Their responsibilities included: the actual construction and erection of plants and machinery, procurement of construction machinery (through Mitsui Bussan) and trial operations of units.

Source: BIPC, March 1993.

4.2.3.1- Personnel of the Company and Training Programmes

The total number of employees of LJPC in the 1973-78 period are shown in Table 7.9. It is worth noting that under Clause 18 of the Basic Agreement, the Japanese and Iranian personnel of the joint venture were employed under the ICDC and NPC employment regulations respectively and would be seconded to LJPC on a non-profit basis.⁶⁶

During this period some technical and managerial training programmes were executed by the Japanese partners for the benefit of the Iranian workers. These included a short-term technical training course for 182 employees, and management training for thirty nine staff. Also thirty Iranians were sent to Japan for a five month technical training course from October 1974 to February 1975. Moreover, a further 129 employees from various departments of the company received technical training during this period.⁶⁷

Finally, in the Y587 billion budget of 1976, a total of Y19,331 million was provided for training purposes of which Y13,442 million was for the training of Iranian and the rest for Japanese personnel. However, in the Y620 billion budget, the amount for the training of Iranian personnel was reduced to Y13,340 million of which Y7,000 million was provided by NPC itself, and the provisions for training of Japanese was cancelled completely.⁶⁸ The inadequate provisions for training of Iranian personnel was later to become a cause for concern for the LJPC partners as later they realised that the number of available operators capable of running the complex after the start of operations was inadequate. In August 1978, the Japanese partners were complaining about this lack of suitable Iranian personnel to operate the complex.⁶⁹

Table 7.9: Number of IJPC's Employees from 1973-78

Year	Iranian Employees	Foreign Employees	Total
1973	200	50	250
1974	300	200	500
1975	350	250	600
1976	570	62	632
1977	746	121	867
1978	1,230	11	1,241

Note: The figures in this table represent only fulltime employees of IJPC and do include the contractor's workers.

Source: A Collection of statistics on the Make-up of the Company's [IJPC] Employees in the Construction Years, BIPC, July 1992.

4.3- The Construction of the Complex

Up to the summer of 1976 no construction, apart from ground levelling work, had been carried out. From then onwards, preparations for the start of construction, like ordering plants and machinery, driving concrete piles into ground were carried out for a year. Finally, in September 1977, six years after the signing of the Basic Agreement, the actual building of various units and installation of machinery began.⁷⁰

In February 1976, Toyo Soda which had been unhappy about the state of the project and poor prospects for petrochemical products in the Japanese market announced that it was reducing its stake in the joint venture from 31% to 15% and withdrew its representative Yamazaki who was the Senior Executive Director in charge of the construction.⁷¹ The shares left by Toyo Soda were "entrusted" to Mitsui Toatsu and Mitsui Petrochemicals so that they could be sold to other companies should any come forward. The new share-holding arrangements of ICDC were thus as follows:⁷²

Mitsui & Co. 45%

Mitsui Toatsu 22%

Toyo Soda 15%

Mitsui Petrochemicals 13%

Japan Synthetic Fibres 5%

The construction of the project started at a time when the Japanese domestic petrochemical industry was in a deep recession. In the view of pessimistic long-term demand for petrochemicals, MITI was not willing to allow IJPC's output to enter the Japanese market in large quantities. In fact the Ministry forced ICDC to sign an undertaking to that effect. This put further pressure on the already strained relations between the two partners as the Iranians accused Mitsui Bussan of inability to act.⁷³

4.3.1- The Destruction of the Oil Dream

In the summer of 1977 (apparently before the start of construction) Mobil Oil notified Mitsui Bussan that after digging nine dry wells in Lorestan, there was no chance of finding any oil there and, therefore, it was leaving the partnership (INEPCO). This was a disappointing news for Mitsui, as its hopes of finding its own oil had all but disappeared. Moreover, it was stuck with a petrochemical project with an uncertain future which had been offered as an inducement to win the Lorestan bidding.

4.3.2- New Problems Facing the Joint Venture

Just as the construction was reaching its peak in the middle of 1978, IJPC became worried about three problems affecting its future viability. These three were currency fluctuations, sales prospects, and supply of raw materials.

The financial plans for the establishment of the company in 1973 had been based on dollars at a time when the rate of exchange was \$1 = Y360 (IR1 = Y3.88).⁷⁴ Later on, with the sharp appreciation of yen against the dollar, the former had become the basis for calculation. In September 1976 when the project officially started, the rates were \$1 = Y308, and IR1 = Y4.2. By the summer of 1978, yen had further appreciated substantially to \$1 = Y190-200, and IR1 = Y2.7. This was of great concern to the IJPC management as most of the loans to IJPC were in yen, while the expected future revenues were to be either in rials (domestic sales) or dollars (exports). This mis-match in expenditure and revenues in terms of currencies would, IJPC management believed, have serious effects on the future profitability of the company. Moreover, the appreciating yen was particularly worrisome to the Iranians whose main source of revenue, oil, was priced in dollars and, moreover, the rial was directly linked to the U.S currency, while most of the loans to pay for the construction of the projects were in yen. In order to overcome this problem, IJPC (presumably under pressure from the Iranians) asked the Export-Import Bank of Japan which was in charge of the overall financing for the joint venture to put the project on a rial basis.

The other problem facing the joint venture was the poor export prospects for petrochemical products. Ever since the oil crisis of 1973, the market for petrochemicals was in a recession with huge overcapacities in Japan, U.S, and Europe, the main potential export markets. These market conditions were expected to last until 1983, when the IJPC complex would be producing at full capacity.

Besides, Iran's underdeveloped industry was unable to absorb a large part of IJPC's output which meant that it had to be exported at low prices to whatever markets the company could find. The only solution left was to wait for the growth of the Iranian

economy so that the domestic market could provide an outlet for the joint venture. This meant a highly protected domestic market with high tariffs and artificially high prices. After this development, Mitsui Bussan began to demand that it and not NPC should handle the Iranian domestic sales. After fervent wrangling between the two partners, Mostofi, for the sake of harmony, agreed to the latter's demands, and IJPC appointed Bussan as its sole sales agent in the Iranian market.

The other main problem facing IJPC was the question of supply and the pricing of natural gas. In the Basic Agreement of 1971, the natural gas was priced at 2 cents per 1000 cubic feet delivered at wellhead for the first 12 years after the start of production. IJPC however, had to provide the necessary investment to transfer the natural gas from the wellhead to the complex site. Moreover, in the same agreement the naphtha required by the aromatic unit was priced at \$1.8 per barrel delivered at Bandar Mahshahr.

In order to reduce construction costs which had risen steeply since the oil crisis, on 28 December 1974 NPC informed IJPC that NIOC would shoulder the necessary investment to transport the required natural gas from the wellhead to the company's site.

Negotiations over the pricing of natural gas became another area of disagreement between the partners. NIOC was arguing that it had to invest over \$700 million to deliver the gas to the IJPC site in Bandar Shahpour, and it needed to get a fair return on this investment.⁷⁵ The Japanese partners of IJPC were, on the other hand, contesting that they had become involved in the project on the promise of free gas. In the middle of August 1978 NIOC proposed the price of \$80 per ton for liquid gas and, in order to mollify the Japanese, recommended a financial package for five years should the joint venture not attain the expected profitability levels.

At the same time NPC submitted another proposal to IJPC that for the first 12

years after the start of operations, natural gas would be priced at 30 cents BTU (British Thermal Unit), and liquid gas at \$40 per tonne for the first five years, and \$80 for the next 7 years. These NPC suggestions were accepted by the Japanese partners of IJPC, but due to the political situation developing in Iran, the agreement was never implemented.

4.3.3- The Political Developments in Iran

Just as the construction of the IJPC complex was reaching its peak in the middle of 1978, political turmoil engulfed Iran. This unrest was due to popular dissatisfaction with the Shah's rule and people demanded the replacement of his regime with a democratic one. In order to weaken the government, many strikes started in all sections of the economy. The most important of these was the strike by workers in the oil industry which was the life blood of the country.

At the height of political unrest during early September 1978, the Japanese Prime Minister, Takeo Fukuda, visited Iran and met with the Shah who praised the IJPC project as the ideal type of economic co-operation for Iran. Fukuda also visited the construction site which was at the height of its activities. Yet, three weeks later, the IJPC construction workers joined a nationwide strike called by Ayatollah Khomeini in protest against the Shah's rule.

Although these strikes and the overall political and economic situations severely affected IJPC, the construction efforts continued according to plan until late January/early February 1979. At this time, however, the project came to a complete halt as the revolution was reaching a critical stage. Most of the foreign workers including Japanese and other nationalities who were working on many projects including the IJPC

began to leave Iran. Consequently, the construction of IJPC which was 85% and 60% complete in terms of plant construction and works schedule respectively was brought to a halt in February 1979. Some of the Iranian Directors were against the stoppage of construction as they feared it would never start again. Table 10 shows the actual state of various plants at the end of 1978.

During late January 1979 the Shah left and in early February Ayatollah Khomeini returned triumphant to Iran. On 12 February the revolution reached its conclusion with the overthrow of the Shah's regime and the establishment of an Islamic revolutionary state with Ayatollah Khomeini as its spiritual leader and Mehdi Bazargan as its Prime Minister.

Table 7.10: Rate of Completion of Unit Construction at the End of 1978

Name of the Unit	Completion Rate (%)
NF	89
OL	84.5
CA	70
LDPE	74
HDPE	72
PP	73
BD	31
BSR	51
AR	45
VCM	65
UT	88
CF	81
Site Preparation	100
Licensing	80
Mahshahr Camp Development	100
Total (average weight)	73.5

Source: BIPC, March 1993.

5.0- The Suspension Period (1979-80)

5.1- The Political Environment

The effects of the revolution went beyond the Iranian borders as it caused the Second Oil Shock which doubled the price of oil. It was also to have a decisive impact on the IJPC. Initially, it delayed the completion of the project for one year, but other developments resulting from the revolution were to influence the fate of IJPC even further.

5.1.1- The New Government's Attitude Towards IJPC

The new Prime Minister, Bazargan, who was the director of NIOC during Dr Mossadegh's premiership in the early 1950s, wanted to get the country on its feet as soon as possible.⁷⁶ So one of his first acts was to ask the oil industry workers to end their strike and resume the production of oil which was so vital for earning the foreign currency needed for rehabilitating the economy which had been crippled during the revolution. Moreover, the new government renamed Bandar Shahpour, the site of IJPC construction, Bandar Imam Khomeini and proclaimed that it wanted to complete the project as a monument to the revolution.

Before the revolution, the Japanese were certain of the commitment of the Iranian government and the Shah himself to the petrochemical joint venture. Notwithstanding the new government's hostile attitude towards foreign investment and the West, they were sceptical about the future of the company and Iranian/Japanese relations in general.

Soon after its establishment, the policy of the Provisional Islamic Revolutionary Government towards Japan and IJPC in particular became clear. The new government wanted to have better relations with Japan which it considered to be a non Western industrialised country with no history of imperialism or involvement in Iranian affairs. And it wanted the IJPC to be a symbol of the new relations between the two countries. In order to signal its friendly attitude, Iran exported its first oil consignment after the revolution to Japan on 5 March 1979.

In April, Bazargan sent a letter to Prime Minister Ohira expressing his wish to resume construction of the project. In the same month the Iranian government nationalised the petrochemical industry but exempted IJPC. This attitude greatly

heartened the Japanese partners who became convinced that the new Iranian regime was as committed to the joint venture as the old one.

Meanwhile, on 9 April ICDC announced the appointment of Hideaki Yamashita, a former MITI Vice-Minister as its President (amakudari).⁷⁷ Yamashita who was unfamiliar with IJPC was given the job to enable ICDC to negotiate better with the Japanese government to turn the project into a "national project".

ICDC which by now had run out of money for the completion of IJPC, asked the government of Japan to upgrade the project to a "national project", thus qualifying it for government financial assistance (see the next section for the financial details). Later on that month, MITI announced the conditions necessary for the project to become a national one. ICDC was required to involve the whole of the Mitsui Group and other petrochemical companies like Mitsubishi and Sumitomo, and give capital participation to IJPC construction companies.

Moreover, the Director of the Economic Co-operation Department proclaimed that the project was important in strengthening mutual relations between Iran and Japan and in securing stable oil supplies. He added that the government had all along been financially involved and that the project was of national importance, but greater involvement by the petrochemical industry was essential.⁷⁸

In order to satisfy these demands, ICDC contacted many Japanese companies and invited them to participate in the joint venture. By October 1979, they had succeeded in enlisting the support of 71 companies with a total capital participation of Y51,100 million. Moreover, five new banks joined a banking syndicate to support the project.

Eventually, after intense lobbying by ICDC (mainly by Yamashita), on 12 October 1979 the Japanese government decided to lend Y20 billion to IJPC through the **Overseas**

Economic Co-operation Fund. Additionally, ICDC was to receive a total of Y80,000 million in loans from the Exim Bank and commercial banks. The government, however made it clear that no more money would be forthcoming and asked ICDC not to allow the project to overrun its budget.⁷⁹ Once the financial issue had been settled, the Iranians promised the Japanese to do their best to ensure a stable supply of oil to Japan. With the new financial arrangement in place, the partners agreed to restart the construction on the 11 November 1979. Notwithstanding these financial arrangements, the Japanese and Iranian partners had not yet reached an agreement over the construction budget. Moreover, the problems of housing, natural gas and water supplies had also not yet been sorted out.

5.1.2- The Hostage Crisis

In order to celebrate the new beginning of mutual relations and the re-start of the construction on the project, both countries decided to hold a ceremony. But on the 4 November 1979 a group of students occupied the American Embassy in Tehran and took its diplomats as hostages. Bazargan, who saw this as an act to undermine his government, resigned, and the country entered a new phase of revolutionary upheaval. Consequently, the ceremony and the resumption of work on IJPC was yet again delayed.

The hostage crisis created a policy dilemma for Japan. On the one hand they sympathised with the U.S, but on the other hand, they did not want to offend Iran, who they considered to be of strategic importance in the Middle East, situated between the U.S.S.R and the Persian Gulf, and was supplying around 12% of her oil imports, as well as being host to Japan's single biggest foreign investment (IJPC). The Japanese officials concluded that the stakes were too high for them to gamble on and decided to respond

quietly to events in Iran; as an official stated, "IJPC was our hostage"⁸⁰.

By January 1980, the U.S. Administration was asking its allies in Europe and Japan to impose economic sanctions against Iran, including the embargo of Iranian oil. But both Europe and particularly the Japanese flatly refused this request, arguing that it may complicate the situation further and even create an opportunity for the Soviet Union to take advantage of the turmoil in Iran. However, the Japanese promised to keep the purchase of their Iranian oil to pre-November 4 level. The government of Japan also decided to co-ordinate her policy regarding the hostage crisis with the E.E.C, believing that both had the same policy dilemmas regarding the situation.

On 7 April 1980, the U.S. unilaterally imposed economic sanctions and broke off its diplomatic relations with Iran and asked her allies to do the same. Later on in that month, Japan, in unison with the E.E.C, declared some minimal economic measures against Iran which included cancelling all contracts signed with Iran since 4 November 1979 and not signing any new ones.

However, the Japanese officials on several occasions made IJPC's exemption from economic sanctions a condition for support of an allied boycott. Tokyo felt that the project must proceed despite new problems, including the unavailability of raw materials and the withdrawal of American subcontractors. As one official commented: "certainly, the economic loss resulting from the IJPC failure would be great. But the political cost of abandoning the project now would be even greater"⁸¹, and, despite its reservations, Washington agreed. As a result Mitsui Bussan's negotiations with Iran continued albeit at a slow pace.

Furthermore, the Japanese considered IJPC as a bridge between Iran and the West, which prevented the former from falling into the Soviets hands. The Japanese

policy succeeded as Iran did not dismantle IJPC despite threats to turn the project over to Yugoslavia.

Following the negotiations between Mitsui Bussan and the Iranian officials, in July 1980 the Japanese workers returned to Iran to resume work on IJPC. Thus Japan had managed to prevent IJPC from becoming a victim of the hostage crisis.

5.2- The Financial Aspects During the Suspension Period⁸²

In the 1979-80 period, due to the unique circumstances of the Iranian Revolution and the stoppage of construction of the petrochemical complex, the financial activities of IJPC were very limited, and only two such transactions took place. One was an increase in the paid in capital by IR12 billion, provided equally by the two partners and the payment of IR15.1 million as the last instalment of the direct loan by the Japanese partner which were used to pay the contractors.⁸³

After the revolution, new studies were carried out to determine a new budget for the resumption of construction. These studies showed that due to delays in the completion of the project, payment of additional interest, increases in administration, labour and other costs, destruction of some of the stock, and additional expenses for the security of the complex, a new total budget of \$3 billion (Y750 billion) would be required for the completion of the project.

In order to finance the extra expenditure, the partners agreed to seek new sources of finance. As discussed above, the Japanese partners managed to persuade their government and commercial banks to extend Y80,000 in loans and Y20,000 in grants (from the OECF which was used to pay for the increase in capital). Moreover, in their Extraordinary General Meeting of 4 September 1980, the shareholders of UPC

authorised the raising of the capital to IR60 billion. Of this amount, IR46.5 billion was called by the Board of Directors, but because of new developments explained below only IR44.5 was actually paid in and the remaining IR2 billion was never honoured by the shareholders.

However, with the start of the Iran Iraq War in September 1980 the new budget was never implemented and, hence, the Y80,000 was not disbursed. Furthermore, as Table 7.11 shows, the increase in capital was only partially implemented. Finally, as the Table demonstrates, the only sources of finance during the 1979-80 period were the IR12,000 increase in capital and the IR15.1 million remainder from the direct loan arranged before the revolution.

Table 7.11: Actual Sources of Finance During the Suspension and War Periods (1980-87) (in millions of rials)

Year	* Accounts	Capital	Long-Term Loans	Short-Term Loans	Sub- Total
1980	--	12,000	15.1	--	12,015.1
1981	5,697.8	6,000	--	2,000	13,697.8
1982	16,886.4	--	--	2,400	19,286.4
1983	10,312.1	--	--	11,462.8	21,774.9
1984	--	--	--	28,624.8	28,624.8
1985	8,772.7	--	--	9,430.6	18,203.3
1986	10,045.4	--	--	1,656	11,701.4
1987	10,838.2	--	--	2,489.2	13,327.4
Total	62,552.6	18,000	15.1	58,063.4	138,631.1

Note: *- IJPC had current accounts with other Iranian oil and petrochemical companies from which it could either borrow money or buy goods and services.

Source: BIPC, March 1993.

5.3- The Management and Organisation of the Project During the Suspension Period

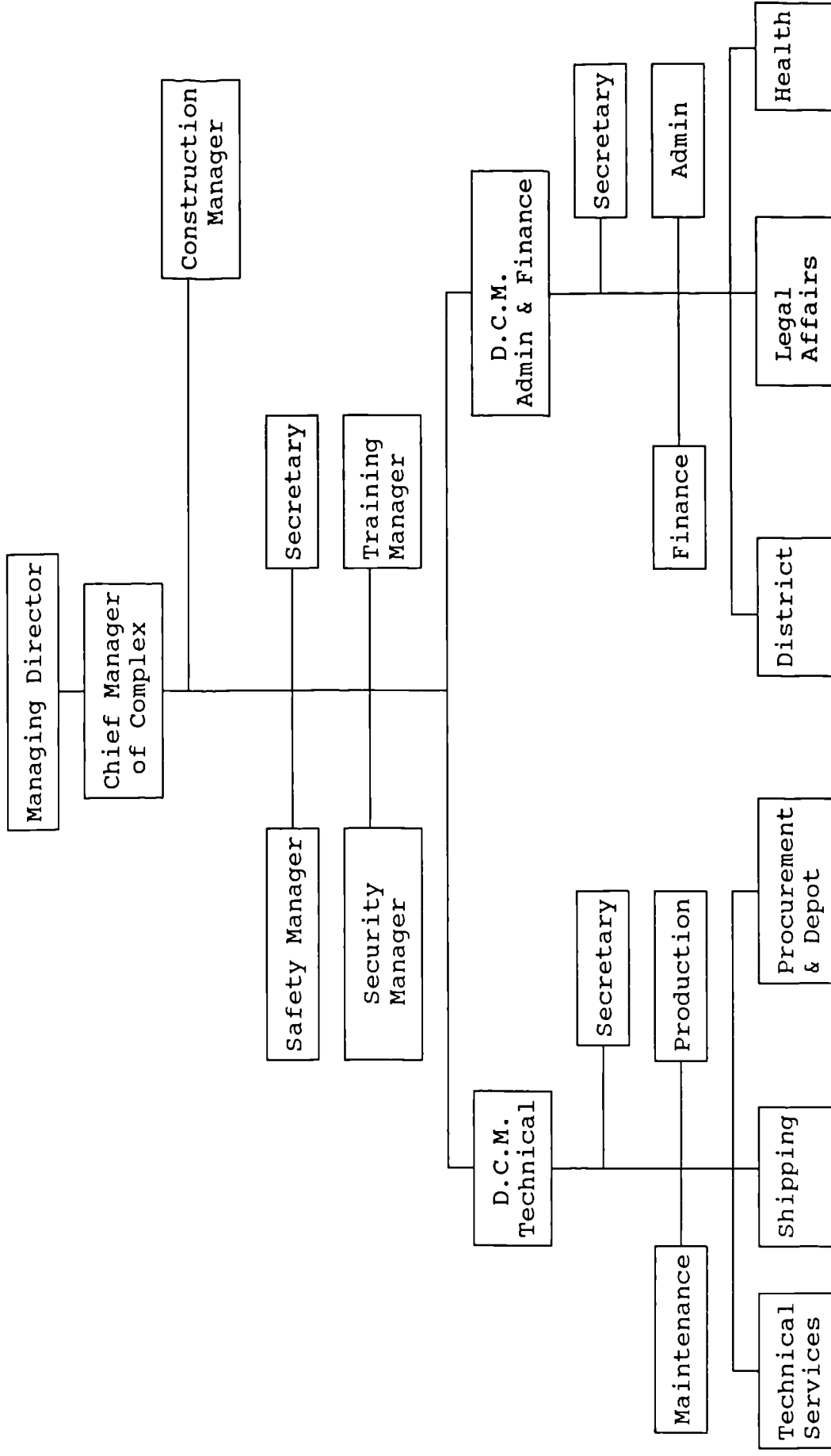
The Japanese managers who were in full control of the project, brought to a halt all construction activities in February 1979 on the grounds of the uncertain political situation and lack of foreign workers who had fled from Iran. In addition, the organisation and personnel of IJPC were affected by events following the general confusion caused by the removal of the old regime and the establishment of the new government. This was especially true as almost the entire top management of NIOC and NPC and consequently IJPC were replaced by new ones appointed by the Islamic Government. The immediate impact of the revolution on the joint venture were: uncertain future for NPC and IJPC personnel, frequent changes of top management and the Managing Director (see Table 7.8) and the resulting chaos in decision making, non-existence of a coherent and long-term strategy regarding the completion or abandonment of the project by the Iranian government and, finally, lack of co-operation by the Japanese partner in the provision of adequate manpower for the maintenance of the project.

5.3.1- The Organisation of IJPC

The organisational chart of the company during the suspension period of 1979-80 is shown in Exhibit 7.4. As the Figure demonstrates, because of exceptional circumstances and the halting of construction, the position of Senior Executive Director with responsibility for construction was changed to that of Chief Manager of the Complex with the prime responsibility of safeguarding the complex until the re-start of construction. Moreover as shown in Table 7.8, although the Managing Director was still Japanese (Adachi), his authority was greatly reduced and Ghashghaii (Deputy M.D),

Amini (Deputy M.D), and (Koohyaar) were, in practice, in charge of the company and decision making. In particular, Dr Koohyaar was given full authority by the Oil Minister⁸⁴ to run the joint venture and negotiate with the Japanese partners.

Exhibit 7.4: The Organisational Chart of IJPC During the Suspension Period



Source: IJPC, September 1980.

5.3.2- Manpower and Training

Towards the end of the suspension period, the company adopted a policy of simplifying its organisation and reducing costs (related to organisation and manpower). As a result, the total number of employees which had risen from 1241 in 1978 to 1543 in 1979 was reduced to 1376 in 1980 (see Table 7.12).

Lastly, during the 1979-80 period no technical or managerial training programmes were carried out by the Japanese partners which became a source of friction between the two partners as the Iranians complained that the former were not honouring their obligations under the Basic Agreement.

Table 7.12: Total of IJPC Employees During the Suspension Period

Year	White-Collar Employees	Blue-Collar Employees	Foreign Employees	Total
1358	728	773	42	1543
1359	612	738	26	1376

Source: BIPC, March 1993.

5.4- The Project's Construction During Suspension Period

As mentioned in Section 4.3, the construction of the petrochemical complex proceeded as planned up to January 1979. But by the end of that month and the beginning of February, the Japanese partners and contractors, citing political uncertainty and lack of security for their employees halted all activities and most of their personnel left Iran.

However, with the new Iranian government's declaration that it intended to complete the project with the co-operation of the Japanese, various discussions took

place between the partners on the resumption of construction.

In July 1979 in a meeting between the representatives of LJPC, NPC, and ICDC in Tehran, the required budget for the completion of the complex was discussed and the following decisions were taken:⁸⁵

- (a)- The resumption of the construction of NF, UT, and CF on the basis of Plan C.
- (b)- Drawing up of a timetable for the resumption of construction of all other units (other than those in a) by the end of September 1979.
- (c)- Presentation of a new budget by the end of September 1979.

After this agreement, preparatory works for the re-start of the construction of CF, UF, and NF began.

5.4.1- Lack of Adequate Infrastructure, Raw Materials and Human resources

At the same meeting (July 1979), the problems related to lack of progress in the completion of infrastructural facilities like housing, industrial water supply, and the insufficient supply of natural gas and lean gas due to the sharp drop in oil production were also discussed.⁸⁶

Another issue facing the company was the unavailability of experienced Iranian personnel, especially at middle to top management levels required for the completion and running of the complex. Two factors were causing this shortage. First, the Japanese partners, on the grounds of inadequate financial resources and spiralling construction costs had failed to implement appropriate programmes for training managers capable of running the complex after the start of operations (as required by the Basic Agreement). Moreover, by carrying out the construction in the "Japanese Way", as discussed in the previous section, the Iranians were denied the opportunity to learn about the complex.

Second, after the revolution many experienced managers left or were sacked from NIOC and NPC, hence exacerbating the above problem.

As a result of the unavailability of Iranian personnel, many Japanese managers and technicians had to be employed by the company which would have created its own difficulties. Furthermore, as mentioned previously, one aim of Iran in accepting Japanese partners for the project was the transfer of petrochemical technology to the country, and this was only possible with the participation of Iranians in the construction and operation of the complex. Obviously, by employing Japanese personnel, Iran would never have fulfilled this goal.

Eventually, as a result of these discussions, it was decided to complete the NF, UT, and CF units on the basis of Plan D (as opposed to the earlier Plan C), and the budget for the implementation of the Plan was estimated at Y750 billion and was presented to the Board on 26 November 1979.⁸⁷

5.4.2- Other Problems Obstructing the Resumption of Construction⁸⁸

Following the above agreement, IJPC requested contractors to resume the construction of the above three units. The latter however, believed that due to the following problems, it was impossible to re-start the construction immediately:

- (a)- Spiralling claims by the workers who had been laid off by the contractors because of the cessation of construction after the revolution.
- (b)- Complications resulting from the occupation of the American Embassy (U.S sanctions and especially unavailability of American sub-contractors working on the project before the revolution).
- (c)- Fundamental changes in the management of NPC and IJPC.

(d)- Sharp devaluation of the rial.

(e)- Occurrence of daily incidents in Iran creating an uncertain political environment, and the bad publicity given to the country in the international press [in particular making it very difficult for the contractors to employ foreign workers vital for the construction of the complex].

Moreover, the contractors asked IJPC to meet the following demands before the construction could be resumed:

(i)- Provision of safety for their employees and property.

(ii)- Arrangements for rapid evacuation of their foreign employees in case of emergency.

(iii)- Settling the claims of sacked workers.

(iv)- Payment of compensation for damages resulting from the suspension of construction.

(v)- Termination of employer's national insurance contributions to the Iranian Treasury.

These demands, nonetheless, were not accepted by IJPC and negotiations with the contractors were halted.

Eventually, after lengthy negotiations between NPC and ICDC during February 1980, the first group of contractors led by Koyo Iron Works & Construction returned to the project site on the 25th of that month. However, because of lack of progress in negotiations over the resumption of construction between Dr Koohyaar and the ICDC representative which took place from 8th to 12th March, the Iranians took a series of unilateral decisions including:⁸⁹

(i) Stopping all payments related to the joint venture excluding salaries, wages, and essential administrative costs.

(ii) Expulsion of six Japanese employees of IJPC from the Tehran Office (20 April 1980).

(iii)- Refusing to register the paid-in-capital contributed by the Japanese partner until the resumption of construction (4 May 1980).

(iv)- Expulsion of a further 12 Japanese from Iran (10 May 1980).

In order to resolve their differences, further negotiations between Dr Koohyaar and ICDC representatives took place between 8th and 18th May 1980. At the end of these meetings, the partners agreed to resume construction of all units as soon as possible and on 26th May the contractors were asked to return to the site.

At the end of June three of the contractors, Sanko Engineering, Koyo Iron Works & Construction, and Chiyoda, returned to the complex site. It was also hoped that the number of contractors (together with the number of Japanese working at the site) would rise as their claims were dealt with by a special committee.⁹⁰

5.4.3- Japanese Concerns Over The Lack of Raw Materials and Profitability of the Joint Venture

To explain the project's conditions to ICDC's partners, the Japanese government and banks, and to encourage the contractors to resume construction, a NPC delegation travelled to Tokyo on the 16th June 1980. In their meetings with the Japanese partners, the latter declared that for the following reasons they were not willing to resume the project's construction:⁹¹

(1)- With regard to the lack or insufficient supply of LNG, the Japanese explained that the petrochemical complex had been designed on the basis of the production of 5.7 million barrels a day (b/d) of crude oil, thus enabling NIOC to supply a sufficient amount of LNG to IJPC. However, with the sharp drop in Iranian oil production after the revolution, the joint venture would not receive adequate supplies of LNG for the production of LPG for exports to Japan (which was to be the most profitable product of

the company), and therefore, the project would not be profitable at all.

(2)- The Japanese officials and financial institutions were waiting for the clearance of laws and regulations for the protection of foreign investment in Iran and the future of IJPC. And until such time, they were not willing to commit further capital to the joint venture.

(3)- Concerns in Japan over the stopping of payments to contractors by Iran.

(4)- Iran's refusal to register the capital paid in by the Japanese.

(5)- The issue of hostages which was preventing the return of American contractors in charge of the installation of gas gathering and transportation facilities from oilfields to the complex site.

(6)- Lack of an agreement over the price of naphtha.

(7)- The Japanese partners were adamant that construction should not resume before carrying out new feasibility studies to determine whether the project could be profitable or not.

Ultimately, at the end of this round of negotiations on 26th June, a joint statement by the two partners was released. The main points of the statement were:

(a)- The Iranian side promised to do its best to find sufficient supplies of LNG for the complex.

(b)- Both partners would jointly survey and control the technical and financial aspects of the project, and would constantly review them.

(c)- Some issues, like the expulsion of Japanese employees, and non-registration of Japanese capital would be resolved as soon as possible. The partners also agreed to a swift resumption of the construction of the whole complex on the basis of mutual co-operation and trust.

After this agreement, a committee composed of Japanese and Iranian experts was formed to carry out the following:

- (i)- Investigate the possibility of obtaining LNG from Units 700 and 800 oilfields in southwestern Iran.
- (ii)- Explore the viability of procuring naphtha and (C5+) from the Abadan Refinery as a substitute for LNG.
- (iii)- Study the feasibility of substituting naphtha and (C5+) for LNG as input in the Olefin and Aromatic units and the resultant change in output if the above two were used.
- (iv)- Survey the necessary changes to the plant and machinery for the substitution of the above two raw materials for LNG.
- (v)- Presentation of a detailed profit & loss statement for the whole project to the shareholders of IJPC.

After extensive research and discussions with NIOC officials, the committee presented its findings to the company:⁹²

- (1)- Naphtha and (C5+) could be obtained from the Abadan Refinery and can be substituted for LNG in the Olefin Unit.
- (2)- Minor adjustments to the Units would be necessary to enable them to accept naphtha and (C5+) instead of LNG.
- (3)- Detailed engineering studies would be carried out after the approval of the Board of Directors of the above findings.
- (4)- Procurement of plant machinery for carrying out the above adjustments would be done after the detailed studies.
- (5)- Financial studies would be undertaken after the procurement of plant machinery needed for the re-adjustment of units.

5.4.4- The Start of Iran-Iraq War

Just as the Japanese had arrived on the site to re-start the construction of the petrochemical complex, Iraqi forces, on 22nd September 1980, invaded the Khuzestan Province, in southwestern Iran, where most of the country's oilfields and the IJPC site are located. The invading forces overran Khorram Shahr, Iran's biggest port, and nearby Abadan, the home of the one of the world's largest refineries. Within a few days, the two cities and the Refinery had been reduced to rubble by the Iraqis.

The site of the IJPC complex which was only 100 kilometres away from the Iraqi border became a prime target for Iraqi aircraft and artillery. The site was attacked for the first time by Iraqi bombers on 24th September and again on the 45th October. With the start of the bombing, the Japanese working on the site fled to Tehran, where some of them remained and some returned home. So once again, the construction of the petrochemical complex was brought to a halt by external factors beyond the control of its owners or managers.

The inhabitants of the above two cities and other towns and villages who survived the attack escaped to towns and villages in the east. Among the places where they took refuge were the IJPC camps in Mahshahr, where they remained for the duration of the war.

6.0- The War Period (1980-88)

6.1- Japanese Policy Towards the War and IJPC

The Iran-Iraq War as well as creating anxiety regarding the future of IJPC posed another policy dilemma for Japanese officials. They wanted the warring parties to fully realise Japan's strict neutrality as well as trying to save the project from total destruction.

For the decision makers in the Ministries of Foreign Affairs, Finance, and MITI, LJPC represented Tokyo's strongest link to Tehran, as well as being Japan's largest single overseas investment. As one official commented "the war is tragic, not just for the nations involved but also for LJPC".⁹³

In late November the debate about the future of the project intensified, with Mitsui Bussan favouring a pull-out, citing increased completion costs due to delays and war damages. Bussan was hoping that after the pull-out it could apply for insurance indemnity to cover its losses. However, MITI refused, arguing that the war was not sufficient reason for the payment of the insurance, and criticised the company for its shortsightedness. MITI managed to obtain Mitsui Bussan's agreement to continue with the project. In the government's opinion, the diplomatic costs of a withdrawal were too great.⁹⁴

There were three reasons for the Japanese government's commitment to the project. First in November 1980, in a meeting with a top Mitsui Bussan executive and Mohammad Ali Rajai, the Iranian Prime Minister emphasised the diplomatic importance of this "monument to the revolution". He further stated that "completion of the project was both the firm policy of his cabinet and the will of the people".

Second, following the Soviet invasion of Afghanistan in December 1979, Tokyo officials were worried about the former's intentions in Iran. As mentioned before, Japan regarded Iran as a strategic country located between the U.S.S.R and the Persian Gulf, the source of 70% of Japan's oil imports. So the officials were worried that if Mitsui Bussan pulled out of the project, the Iranian leaders would accuse Japan of bargaining in bad faith and would ask the Soviets for technical help.

Third, as the influence of the U.S had been weakened in the Middle East

following the hostage crisis, Japan could look even less to its ally for protection and, hence, she had to be more sensitive to the conditions and expectations of the region.⁹⁵

Furthermore, as the government of Japan was backing another petrochemical project in the Middle East between the Mitsubishi Group and Saudi Arabia, it wanted to give an impression of its commitment to the region. In addition to these diplomatic considerations, there were human elements in decisions regarding IJPC. The officials in the Foreign Ministry, Ministry of Finance, and MITI, who had backed the project from its inception seemed to have a personal stake in its success or failure.

Meanwhile on 14th October 1980, fearing for their safety, ICDC withdrew its personnel from the site and stated to the Iranian government that they would return when a cease-fire between Iran and Iraq was in effect. The Iranian leaders did not object to this action, but did ask for reassurances about Japan's continued commitment to the project.

Furthermore, the Japanese officials ordered the Overseas Economic Development Fund (OEDF) to stop its monthly payment of \$6-\$8 million to Mitsui Bussan for IJPC expenses. The officials maintained that the decision was purely economic, as there was no point in spending money on a venture which had been bombarded at least once and may be hit again as long as the war was on.

The Japanese took a more direct action regarding the bombing of the project. The Foreign Minister, Ito, in a meeting with an Iraqi official in Tokyo, offered to rebuild all the Japanese projects damaged during the war in exchange for Iraqi assurances that they would stop attacking the IJPC site.⁹⁶ However, this offer was not taken up by the Iraqis, they continued to hit the site, and the Japanese were severely criticised by the Iranians for such an action, as they believed that this offer demonstrated the importance and

value of the project to the Japanese and hence the Iranians.

The indefinite suspension of the project caused acrimony between the government and Mitsui Bussan. ICDC was arguing that it had to make payments for wages and interest on a monthly basis without receiving or even the expectation of receiving any income from IJPC in the future, adding that the cut-off of the monthly payment by OEDF had worsened its financial position. ICDC wanted the Japanese government to allow it to stop the monthly interest payment on loans from the Japanese banks, adding that according to Iranian law the payment of wages had priority over all other outgoings, so the only way to lessen its financial burden was the suspension of the interest payments. The government was fiercely opposed to this idea. According to officials, Mitsui Bussan and ICDC were the two smallest stakeholders in the joint venture and, as such, must not be allowed to wreck its financial structure.

It is important to note that, in a complex set of four separate agreements, the Export-Import Bank of Japan, 20 private banks, and 100 Japanese companies had provided \$980 million to Mitsui Bussan and ICDC for IJPC. In addition, the Export-Import Bank and 20 companies had extended another \$380 million to the Iranian government (the Direct Loan) and NPC, thus exposing Japanese institutions to a total loan of \$1.36 billion. The second largest source of capital, loans floated on the Eurodollar market by NPC, came to \$900 million. A distant third were direct Japanese investments of \$302 million by Mitsui Bussan, ICDC, the OEDF and 100 Japanese companies.⁹⁷

Even more troublesome for Mitsui Bussan and ICDC was a demand by the Iranian partner for an increase in the capital of IJPC by 3 billion rials (about Y9 bn). This demand was regarded by the Japanese as a reflection of the Iranian view that "there

is no need for seeking a shelving of interest payments if the Japanese partner simply complies with a capital increase".⁹⁸ As the Japanese government and financial organisations were maintaining that the shelving of interest payment which for the year ahead amounted to Y30 billion "rests on receiving a request from the Iranians"⁹⁹, the demand for the capital increase dashed all Mitsui Bussan's hopes.

In the first half of 1981, officials started a series of secret joint reviews with all Japanese parties concerned with IJPC. These reviews were based on three assumptions: first Mitsui Bussan and ICDC should seek private lenders for capital to cover their share of the \$450 million to \$1.2 billion for additional costs. Second, both organisations could proceed with construction only when the government was satisfied that peace between Iran and Iraq was real. Third, they would be allowed to withdraw from IJPC in the event of Tokyo and/or Tehran concluding that the project was no longer financially feasible.¹⁰⁰ In the view of the officials from MITI and the Ministry of Foreign Affairs (MOFA), all business activity on the project had been suspended and, as a matter of fairness to Mitsui Bussan and ICDC, they had a right to curtail their business expenses. So these officials concluded that the companies must complete their interest payments, but rescheduling of the principal payment which was due to start in February 1982 would be considered if the war lasted beyond 1981. Furthermore, it was decided that Mitsui Bussan and ICDC could stop their monthly transfers to IJPC for wage payments and other construction costs from April.

Following this consensus on the financing arrangements, Yamashita, the President of ICDC travelled to Tehran on the 4 March 1981 and met with the Iranian President Bani-Sadr and NPC management. Yamashita, after reaffirming his company's intention to complete the project, informed the Iranian side of the decision to stop payments to

IJPC. To his surprise, Bani-Sadr, who was also concerned with the increasing costs of construction, agreed to the suspension of payments, as the Iranian government itself had difficulty in meeting its half share of the costs.

Almost at the same time, in a separate but interrelated development, Mitsui & Co. made an agreement with the NIOC to buy 30,000 barrels a day (b/d) of Iranian crude. Mitsui managed to buy 50% more oil than it wanted despite the fact that 11 other Japanese companies failed to get as much oil as they needed.¹⁰¹

This special treatment given to Mitsui Bussan by NIOC was due to the former being a partner in IJPC and was probably an indication of the Iranian desire for the continued involvement of Mitsui & Co. in the project. MITI, in spite of its earlier directives, agreed to the increased oil import in order to help Bussan to strengthen its financial position.¹⁰²

In the spring and summer of 1981 the internal situation in Iran worsened as the infighting within the government intensified. The anarchy and confusion reached a climax with the sacking of Bani-Sadr from the Presidency and the death of 72 top officials when the headquarters of the ruling Islamic Republican Party was destroyed by a bomb. Then a wave of replacement of liberal elements of the government by Islamic hardliners followed.

For the Japanese officials, this situation presented an uncomfortable dilemma. The toppling of the Iranian leaders by bombing and assassination dramatically reinforced the importance of IJPC. In their view it was the last remaining channel of goodwill with the Iranian government as other tools of diplomacy had been blunted. In their view Japan had no other major option in keeping relations with Iran open but to support IJPC.¹⁰³

For the Japanese side, the wave of violence and rapid successions of power created another problem. They were concerned that any discussions and agreements concluded with Iranian officials may not be recognised by their successors and, therefore, they would have to start all over again. So the chaotic situation impeded the start of substantive talks which were so important for the future of IJPC.

In late July 1981, ICDC representatives travelled to Tehran to have talks with the Iranian officials. During these meetings, the Japanese proposed the revision of the Basic Agreement which stated that the costs should be split 50-50 between ICDC and NPC.

They argued that it was unfair to ask ICDC to pay for increased costs due to delays and war damages, which after all was not of their own making. But the Iranians rejected the proposal and stated that the war had not invalidated the terms of the original agreement.¹⁰⁴

Having failed to establish their position, the ICDC representative returned to Tokyo. Four weeks later they received the news of the assassination of President Rajai and Prime Minister Bahunar of Iran. For Mitsui Bussan it was the last straw. In their view, the continuing instability had rendered the viability of any discussions with Iran ineffectual. So on 31 August, Mitsui Bussan's President, Toshikuni Yahiro, citing the political and economic downturn in Iran, stated that his company could no longer cope with the situation there.¹⁰⁵

MITI officials, at this point, believed that the political uncertainties made the holding of commercial talks between Mitsui Bussan and Iran very difficult, but that this did not justify abandoning the joint venture. Furthermore, in September, Iran put strong pressure on Mitsui Bussan for a new round of talks. In MITI's view, this development meant that the negotiations would have to continue. MITI used the insurance indemnity

stick to force Bussan back to the negotiating table. They formally informed Mitsui Bussan that a pull-out by Iran or a withdrawal by the Japanese banks would allow it to apply for insurance pay-out. They informally added that a withdrawal was out of the question and only an 'Act of God' would release the company from its commercial obligations, and that being a disclaimer from Iran.¹⁰⁶ Such a situation could never occur, for Imam's Petrochemical Project (Imam being the title of Ayatollah Khomeini), as IJPC was known in Iran had both become a political test and a diplomatic commitment of the regime. So, a decision to quit would be regarded as a defeat for the revolution.¹⁰⁷

In early October, Dr Hassan Dabiri, the President of IJPC, travelled to Tokyo. During his two weeks stay there, he was informed by the ICDC that they intended not to invest any more in the project and become mere subcontractors, and he promised to convey their message to the Iranian officials. However, Mitsui Bussan executives who believed that the talks had made no progress, were gloomy about the future prospects.¹⁰⁸

Meanwhile, the five Japanese partners of ICDC who had guaranteed the Y125 billion loan to IJPC, requested the Export-Import Bank and twenty commercial banks to agree to a one year deferment of the repayments of principal and interest which was due in February 1982.¹⁰⁹

Following the meeting with Dr Dabiri, ICDC informed NPC that the end of October was the time limit for the resumption of talks on the future of the project. The Japanese were especially irritated about the Iranians postponing a mission to Tokyo to answer a Japanese questionnaire on the feasibility of the joint-venture.¹¹⁰

Almost at the same time, Iraqi bombers attacked the construction site, causing

further worries in Japan.¹¹¹ Eventually, on 30 October, a seven member Iranian mission led by Mostafa Taheri, the managing director of NPC arrived in Tokyo to negotiate the revision of the Basic Agreement as requested by ICDC earlier in the month and hold talks with MITI officials.¹¹²

MITI officials believed that their meeting with Taheri on 2nd November must accomplish three objectives. First, the technical problems regarding raw materials, especially the pricing of gas, must be sorted out. The calculations for the pricing of gas had been made during the Shah's regime and the situation had changed much since then. Another problem was the availability of gas itself. The oil production and consequently the production of associated gas that was to feed the petrochemical complex had dropped by at least 49%, and one MITI official stated that "the whole structure of IJPC rests on the promise of free fuel".¹¹³

The second technical problem related to the financial structure of IJPC.¹¹⁴ MITI officials believed that, in fairness to Mitsui, Iran must accept the payment of additional costs resulting from delays and war damages. Third, the officials wanted Taheri to realise that the joint venture was a commercial concern and, as such, although backing it politically, there was little that Tokyo could do to make the project financially successful and Iran had to depend on itself and Mitsui Bussan for that.

The meeting however, was to be a disappointment for MITI. Taheri, relying on a feasibility study whose data was from the pre Iran-Iraq war period, stated that the project would be a major success. MITI officials told him that it was important to make the project commercially profitable and to do so, a scientific evaluation of IJPC as it existed then was needed, and without such information the project would fail.

Despite the unsuccessful meeting, MITI officials' belief that the Iranians were still

wholeheartedly committed to the project was reaffirmed. Indeed, so far they had promptly paid all their share of money owed. They further believed that the political uncertainties in Iran had not allowed NPC to make an objective analysis of the project, and there was also no reason that the integrity of the Iranians should be doubted.

Taheri's meetings with Mitsui Bussan executives were very stormy. The executives told him that the revolution and the war had already undone the joint venture, and issued an ultimatum. He was told in very explicit terms that Mitsui Bussan was no longer going to invest in the project, but would be willing to become sub-contractor on a cost-plus-fee basis. He was given until the 15 December to accept or reject the ultimatum. From Mitsui Bussan's perspective, the ultimatum provided two alternatives. Refusal by NPC would mean Iranian withdrawal and insurance money, whereas acceptance would mean Iranian money and possible IJPC success.

The MITI officials interpreted the ultimatum as a fundamental shift in the strategy of Mitsui Bussan towards the joint venture. In their belief, until then they had had to deal with two Mitsuis: one group which had backed the project, and the other which had fiercely opposed it, resulting in a breakdown in policy consensus. The ultimatum, MITI believed, was an indication of the latter group gaining the upper hand, and the company in general becoming more realistic.

But the Iranians did not respond to the ultimatum the way Mitsui Bussan's executives had hoped. On 26th November, a cabinet-level Iranian committee indicated a decision to stay with the project. Within the Iranian government, the Minister of Energy [who represents NIOC's (NPC parent company) shareholders on its AGM's] on 7th December advocated a pull-out, arguing that the soaring costs had made the project unfeasible. But the managing director of NPC was fast to reject this as one person's

opinion and reiterated his government's intention to finish the project.

On 8th December, Tehran issued a statement which emphasised Iran's determination to stand behind IJPC and the importance it placed on Japanese co-operation. The statement added that, while accepting the principal of paying for all additional costs, it needed to know how high they would go. In Mitsui Bussan's opinion, the statement made the acceptance unclear and subject to further negotiations.

Being dissatisfied with Iran's response, Mitsui Bussan's executives decided to send a more carefully worded ultimatum to Iran which would narrow its range of response to a clear yes or no, and set a new deadline of 8th January 1982. But Bussan received a disappointing reply from Iran, which neither accepted or rejected the ultimatum. Mitsui Bussan extended the deadline to the end of January and demanded that NPC agree to terminate the project if it failed to recognise the ineffectiveness of the present agreement by then.

On 25th January, Taheri, responding to Mitsui Bussan's ultimatum, offered to extend a \$540 million loan to IJPC to repair the war damage and complete the final phase of the construction. He added that a decision by Bussan to quit would force NPC to begin legal proceedings in Iran's Supreme Court.

In MITI's view, Mitsui Bussan's ploy had come to an end and, furthermore, the offer of a loan had eliminated the possibility of insurance money, thus forcing the company into a continuing relationship with Iran. MITI also believed that the loan offer was an indication of Iran's deep political commitment to the project. Having analyzed the situation, MITI informed Mitsui Bussan that it would not respond to any request for indemnification. So Bussan had no choice but to negotiate with NPC to reach a mutually acceptable compromise.

On 23rd February 1982, representatives of ICDC and NPC began a new round of negotiations in Tehran. At the meetings the Iranian side agreed to pay all the remaining costs, but both sides failed to reach any agreement on the profitability of the venture or the revision of the Basic Agreement as demanded by the Japanese.¹¹⁵

There was also disagreement on the level of cost sharing. The ICDC wanted Iran to shoulder costs beyond Y620 billion, which the two sides had equally shared, whereas the Iranians insisted that they were prepared to accept extra costs over Y730 billion.¹¹⁶ (The Y730 billion agreement was reached in March 1980, before the start of the Gulf War).

The negotiations in Tehran were an indication of the futility of future talks. But time was not on the joint venture's side. As every day passed, its potential profitability would recede even further. Many people involved also believed that future talks would not solve anything because of the basic problems of sharing costs, profitability and the Basic Agreement. They further believed that Iran, Mitsui Bussan, and the government of Japan should work together and come up with a realistic solution without wasting time.¹¹⁷ Also, MITI officials stated that the negotiations should continue, as any drastic action may damage the "friendly relations between the two countries".¹¹⁸

In March 1982, Mitsui Bussan announced that it would cut its dividend for the financial year 1981 due to the losses related to its investment in IJPC. The cut in the dividend was the first of its kind in the history of Bussan since the great merger of 1959,¹¹⁹ and in April, the Company announced the dismissal of Yoshizo Ikeda as chairman, holding him responsible for the IJPC fiasco.¹²⁰ Furthermore, in April, Mitsui Bussan asked its employees to take an across the board pay-cut of 2%, at a time when spring wage settlements were resulting in an average increase of 7%.¹²¹

Meanwhile in March, the government of Japan decided to adopt a flexible approach in the handling of Mitsui Bussan's request for insurance payment. Having seen little progress in negotiations, and realising the financial difficulties of Bussan, it decided to shorten the assessment period from 1-2 years to about six months and pay out Y10-12 billion when the company applied for insurance indemnity in April.¹²² However, the government insisted that it had not ignored Iran's wishes for the completion of the project and insisted that the insurance payment was for "suspension" of the project. So Mitsui Bussan would have to pay back the money if the group completed the project.¹²³

The fourth round of talks between Mitsui Bussan and Iran were held at the end of May 1982 without achieving any compromise.¹²⁴

Ultimately, after a year of hard negotiations, NPC succeeded in securing ICDC's promise for assistance in completion of the project after agreeing to pay for all the additional costs. On 17th May 1983, M. Taheri, the M.D. of NPC, and T. Yahiro, the President of Mitsui Bussan, concluded a Supplementary Agreement for the resumption of the construction of IJPC.¹²⁵

The new financing arrangement, provided for in the new agreement, freed ICDC from paying Y10 billion in annual interest as well as the additional financing required for the completion of the project. In exchange, the five Mitsui companies agreed to send their engineers and technicians to Iran to first assess the damage and then start the completion of the project.

In October 1983, ICDC announced that Chiyoda Chemicals and Toyo Engineering had agreed to become joint managing contractors for IJPC. Furthermore, ICDC was at the same time conducting negotiations with 28 other construction companies to reach agreement with them on the resumption of work on the project. All these companies

were planning to send over 100 engineers to Iran to check the damage caused by the war, and start repairing and constructing at the same time.¹²⁶ However, Iraq warned Japan twice that they might bomb the site if work was resumed.¹²⁷ In response to these threats against the project, the Japanese Foreign Minister, Abe, at a Japan-Iraq joint ministerial conference which was held in Tokyo on 22nd November 1983, urged Iraq not to attack the IJPC site.¹²⁸

In December, ICDC announced that it had appointed Ren Takemura as its new president to bolster the management of IJPC as construction was due to resume in January 1984.¹²⁹ Under the rules of the joint venture, the President of ICDC would automatically become the vice chairman of IJPC.

In late December 1983, Japanese technicians returned to Iran to resume work on the project. But on Sunday 19th February 1984, Iraqi planes attacked the site. The bombing caused no casualties among the Japanese workers. However, the Iranian government and ICDC decided to suspend the construction until the security of workers could be guaranteed.¹³⁰ So the completion of IJPC was delayed yet again.

Apparently, the 150 Japanese workers did not leave Iran, but remained there (probably in Tehran) in order to resume work on the project as soon as conditions permitted. In September 1984, ICDC decided to send another 200 technicians to Iran to join the existing workforce there to start construction works scheduled for October.¹³¹

On 22nd September, the Iraqis again attacked the construction site and caused injuries to some Japanese workers who had already started assessing the damage there.¹³² Following the attack, the Japanese workers were evacuated from the site and returned to Japan. However, ICDC decided to leave 30 technicians in Tehran as a symbol of its commitment to complete the project.¹³³

A provisional agreement reached between NPC and ICDC on 18th October 1984, provided for the return of all Japanese workers (except for the 30 as noted before) home and, furthermore, all parties agreed to a temporary suspension of work on the project, and to resume construction when the safety of the site and workers could be guaranteed.¹³⁴ Having witnessed the problems affecting IJPC, a Mitsui Bussan executive described the project as "neuralgia" which could not be immediately cured.¹³⁵ This comment showed the sheer frustration of Bussan management with IJPC's vicious circle of construction, suspension, and small-scale working on the site.

Although the construction work had been suspended indefinitely pending an end to the Iran-Iraq War, the fate of IJPC was never far from the minds of Iranians and Japanese officials. In a meeting between the Japanese Prime Minister, Yasuhiro Nakasone and the Iranian Heavy Industry Minister, Behzad Nabavi, in Tokyo in late February 1985, the Japanese Premier reiterated his country's commitment to the completion of the project and stated that only the lack of safety for Japanese workers was holding the Japanese partners back from finishing the project.¹³⁶

In April 1985, the Majlis (the Iranian parliament) refused to ratify the Supplementary Agreement of May 1983 between NPC and ICDC, arguing that the new agreement was unnecessary, and the joint venture must continue under the Basic Agreement.¹³⁷ This meant that any future cost had to be shared equally between NPC and ICDC, as stipulated under the Basic Agreement. The news was a blow to Mitsui Bussan which had since 1983 believed that it did not have to shoulder any new costs related to the completion of IJPC.

At a press conference in Tokyo on 3rd July 1985, Ali Akbar Hashemi Rafsanjani, the then Speaker of Majlis, said that Iran was ready to consider new proposals on the

future of IJPC.¹³⁸ In another interview with N.H.K, he explained that the project should continue as before, and it was in Japan's long term interest to fulfil its commitments to Iran. He added that his country was interested in the transfer of Japanese technology through joint ventures such as IJPC, and that these types of ventures were in the long term interests of Japan.¹³⁹ Mr Rafsanjani was implicitly implying that if Mitsui Bussan did not complete the project according to the Basic Agreement, there would be long term implications for Japan's interests in Iran including supply of oil, trade, and future investments.

By this time the resumption of work and the completion of the project had become hypothetical. Both Iran and Iraq had intensified targeting each other's residential and industrial areas, with IJPC being a prime target for Iraqi bombers.

Furthermore, in early 1986, the price of oil collapsed causing severe financial difficulties for the oil producing countries and especially Iran. As a consequence she failed to pay Y10.4 billion in principal and interest payments to the Export-Import Bank of Japan for loans related to IJPC.¹⁴⁰ Iran had also failed to pay interests on a Y125 billion loan from ICDC since May 1984, amounting to Y10.4 billion a year.¹⁴¹ Citing the Iranian side's refusal to repay its loans, ICDC was arguing for a total pull-out. In late 1986, Mitsui Bussan demanded a Y30 billion insurance payment from MITI, while the latter was still for new developments, such as an end to the war.¹⁴²

In August 1987, Mitsui Bussan made provisions of Y125 billion (\$947.4 million) in its accounts for losses related to the IJPC.¹⁴³

6.2- Financial Position of IJPC During the War

The most important fallout of the war, as we saw in the previous section, was the Japanese assertion about the unprofitability of the joint venture. As a consequence, they persistently refused to increase their investment or extend new loans to the joint venture. So all the financial burdens of IJPC fell on the shoulders of the Iranian partner, to whom the importance of the project went beyond economic considerations. To them, the petrochemical complex had political, social, and technological as well as economic significance and, hence, tried to keep the project alive throughout the war by providing it with the necessary financial resources.

6.2.1- The Sources of Finance in the War Period

During the 1980-88 period in which the construction of the project came to a complete standstill, the necessary funds for payment of wages, salaries, maintenance costs, and loan repayments were all supplied by NPC through the extension of short-term loans.

As Table 3.11 shows, the main sources of funds for IJPC during the war years were various Iranian petrochemical and oil companies, and NPC which provided the company with IR62,552.6 and IR58,063.4 respectively. The only Japanese financial contribution was the payment of IR6,000, their share of the increase in paid-in-capital agreed in 1980 (see section 5.2 for details).

6.2.2- Repayment of Loans

The above mentioned funds provided by Iranian companies to IJPC were used to pay for wages, salaries, administrative expenses, and maintenance of the complex. But

the main burden on IJPC during this period was the repayment of loans received before the revolution. If the project had been completed as originally planned, revenues generated by sales of products would have covered these repayments. But the unfinished complex, under constant Iraqi bombardment, was facing an uncertain future with no prospects for the start of operations. Coupled with the Japanese partners' refusal to make any financial contributions, the burden of the repayment of these loans fell on the shoulder of the Iranian partner.

Tables 7.13 and 7.14 exhibit the agreed timetable between IJPC and the banks and other creditors for repayment of loans received by the company. However, due to the above mentioned factors, these obligations, as shown in Table 7.15, were only partially honoured by the provision of short-term loans by NPC throughout the 1980-87 period. As this Table shows, no loan repayments were made in 1987. The reason for this was the collapse of oil prices in 1986 which deprived Iran from earning adequate foreign exchange to honour these obligations.

Finally, Table 7.16 illustrates the total repayment and balance of some of these loans as at the end of 1987. The balance of these loans, as later sections will show, were settled according to the arrangements made in the "Friendly Separation Agreement" of 1989.

Table 7.13: The Original Timetable for the Repayment of Loans

	Current Accounts *	Long-Term Loans	Short-Term Loans	Sub-Total
1979	--	--	9,868.5	9,868.5
1980		148.8	--	148.8
1981		74.4	--	74.4
1982	--	5,560.5	--	5,560.5
1983	--	5,560.5	--	5,560.5
1984	6,388	5,560.5	--	11,948.5
1985	--	5,560.5	--	5,560.5
1986	--	74.4	--	74.4
1987	--	--	--	--
Total	6,388	22,539.6	9,868.5	38,796.1

Note: *- IJPC held current accounts with other Iranian oil and petrochemical companies from which it could draw cash or buy goods and services.

Source: BIPC, March 1993.

Table 7.14: The Agreed Timetable Between IJPC and Creditors for the Repayment of Loans (1)

	Princi- pal	1982	1983	1984	1985	1986	1987
Iranian Loan 2	IR24 bn \$340,1m	R1,200,000 \$170,000	R3,560000 \$50,536	R3,848000 \$54,520	R3,848000 \$54,520	R3,848000 \$54,520	R3,848000 \$54,520
ICDC Loan 3	Y125bn	Y7,500,000	Y21,500000	Y24,000000	Y24,000000	Y24,000000	Y24,000000
Yen Loan	Y28.8bn	Y1,920,000	Y1,920,00	Y1,920000	Y1,920000	Y1,920000	Y1,920000
Direct Loan	Y60 bn	Y10,000,000	Y10,000000	Y10,000000	Y10,000000	Y10,000000	Y10,000000
Suppli- ers Loan	Y36.2bn	Y6,033,332	Y6,033332	Y6,033332	Y6,033332	Y6,033332	Y6,033332
IRNIH Loan 4	R669.6m	R74,400	R74,400	R74,400	R74,400	R74,400	R74,400

Notes: 1- Figures in one-thousandths (1/1000), unless otherwise specified.

2- The Iranian loan's last instalments were scheduled as follows:

(a)- The rial loan's last instalment of R3,848 million due in 1987.

(b)- The dollar loan's last instalment of \$54,520,000 due in 1987.

3- The nine remaining instalments of 1,920 million of the yen loan were due between 1988 to 1996 inclusive.

4- From 1979 to 1982 (inclusive), three equal instalments of 74.4 million rials, totalling 223.2 million rials were paid back.

Source: BIPC, March 1993.

Table 7.15: Actual Repayment of Loans by IJPC (in millions of rials)

Repay'ments	1980	1981	1982	1983	1984	1985	1986	1987	Total
Iran'n Loan	--	--	--	--	--	--	--	--	--
ICDC Loan	--	--	--	--	--	--	--	--	--
Y27 m Loan	--	--	--	--	--	--	--	--	--
IRNIH Loan	148.8	74.4	74.4	74.4	74.4	74.4	74.4	--	595.2
Acc 1	89.0	--	--	--	6,388	--	--	--	6,477.8
Direct Loan	--	--	2,976.6	2,976.6	2,976.6	2,976.6	--	--	11,906.4
Yen Loan	--	--	562.1	562.1	562.1	562.1	--	--	2,248.4
Supl'r Credit	--	--	1,947.4	1,947.4	1,947.4	1,947.3	--	--	7,789.5
Short Term 2 Loans	--	--	--	--	--	--	--	--	--
Total	238.6	74.4	5,560.5	5,560.5	11,948.5	5,560.4	74.4	--	29,017.3

Notes: 1- See Note (*) of Table 13.

2- NPC short-term loans to IJPC mentioned in the text.

Source: BIPC, March 1993.

Table 7.16: Balance of Loans at the End of 1987

	A		B		C	
	Rial	Currency	Total in Rial	Currency	Rial	Total in Rial
Iran'n Loan	24,000	\$340.1	--	--	24,000	47,976.4
ICDC Loan	--	Y125,000	--	--	--	38,702.1
Yen Loan	--	Y28,800	--	7670	--	6,183
Direct Loan		Y58891.9	--	40000	--	5,623.3
Supl'rs Credit		Y36163.7	--	24109.2	--	3894.5
IRNIH Loan			595.2	--	74.4	74.4
Total			124993.3			102453.7

Notes: A- Actual amount of loans withdrawn.

B- Loans repaid.

C- Balance of loans outstanding at the end of 1987.

Source: BIPC, March 1993.

6.3- The Management and Organisation During the War Years

Due to its proximity to the war zone, and its potential importance to the Iranian economy, the site of the IJPC complex was constantly attacked by Iraqi forces. In fact the site was bombarded 42 times by Iraqi planes. This, apart from damaging the plants and machinery, had a demoralising effect on the employees, causing their dispersal and departure from the company. In addition, the settlement of over 20,000 war refugees in the company's housing complexes in Mahshahr and B Camps, further aggravated the accommodation shortages and problems, and put IJPC employees under further strain.

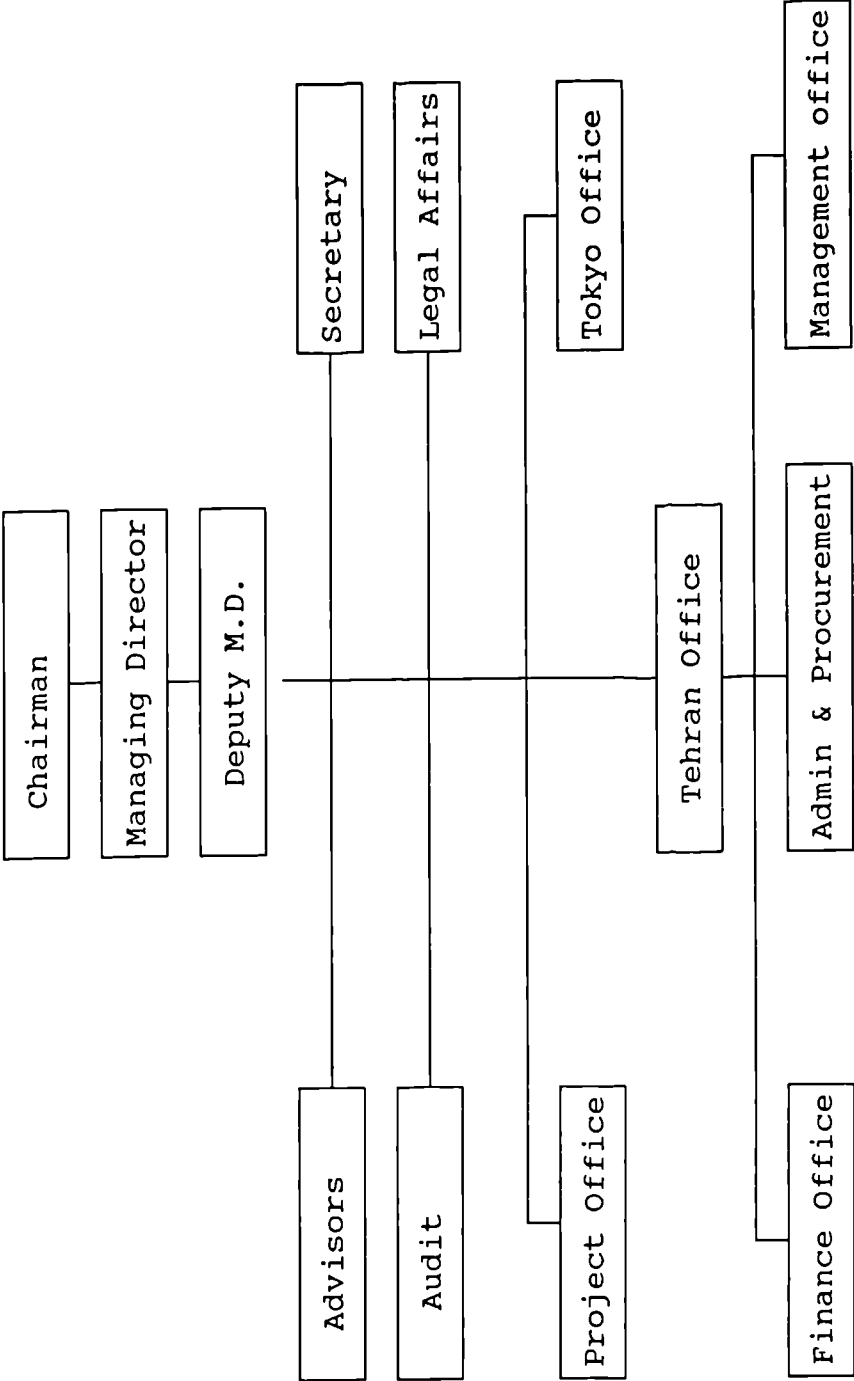
During the war period, the Board of Directors of IJPC granted the Managing Director special powers and authorised him to spend up to IR100,000 million for repairing damage caused by bombings.¹⁴⁴

6.3.1- The Organisation of IJPC

The war, low morale and dispersal of experienced Iranian employees, coupled with the general disorganisation precipitated by the revolution, and departure of Japanese employees, caused confusion in the management and organisation of IJPC. As no construction was taking place and the most important activity of the company was the maintenance of the complex, the organisation of the company, as illustrated in Exhibit 7.5, was further simplified.

In the re-organisation, the Tokyo Office, which was in charge of planning and procurement, was closed down and its staff were either transferred back to the ICDC parent companies or retired. An important organisational feature of the company during this period was the transfer of the company's documents, totalling 31 tons, from the Tokyo Office to a newly established Documents Centre in Iran in 1982.¹⁴⁵

Exhibit 7.5: IJPC's Organisational Chart During the War Period (1980-89)



Source: IJPC, March 1983.

6.3.2- The Company's Manpower During the War Period

With the prolongation of the Iran-Iraq War, as Table 7.17 demonstrates, almost all of the Japanese employees left Iran in 1983. Moreover, as mentioned above, with the general inactivity of the company, simplification of its organisation, and dispersal of administrators and engineers, the number of white-collar employees, as shown in Table 7.17, was reduced from 602 in 1981 to 339 in 1988. However, during the same period, the number of blue-collar workers rose from 731 to 1267 (Table 7.17).

Table 7.17: Total Number of Employees During the War Period

Year	White-Collar	Blue-Collar	Foreign	Total
1981	602	731	26	1,359
1982	597	1,110	35	1,724
1983	608	1,184	--	1,729
1984	557	923	1	1,481
1985	452	1,247	1	1,700
1986	395	797	--	1,192
1987	343	887	1	1,231
1988	339	1,267	1	1,607

Source: BIPC, July 1992.

6.3.3- Training

During the war years no training programmes of any kinds were implemented. The only exception was the military training provided by the Iranian Armed Forces for the company employees on a voluntary basis.

6.4- The State of the Project During the War

As mentioned before, with the start of the Iran-Iraq War, all activities related to the construction of the project was brought to a complete halt. However, throughout these years, discussions over the future of the joint venture and resumption of construction were held on many occasions between the partners and the Iranian and Japanese governments (see Section 6.1).

As explained earlier, with the occupation of the company's camps by more than 20,000 war refugees, the already inadequate housing provisions were put under severe strain. In addition, with the rapidly increasing number of war casualties and ensuing shortages, IJPC put its hospital, emergency, and other medical facilities at the disposal of the Iranian Navy. Also all other properties of IJPC, like vehicles, heavy trucks, and construction machinery were either sent to the nearby war front or used by organisations involved in the fighting.¹⁴⁶

In December 1984, a company of soldiers from the Revolutionary Guards occupied the IJPC site in Bandar Imam, and throughout their 11 month stay there, prevented the company's management from discharging their responsibilities. Moreover, they, together with 36 other governmental organisations involved in the war, used any of the complex's properties useful for the war effort either on site or transported them to the war front. Besides these organisations, NIOC used IJPC facilities to repair oil installations damaged in the fighting. These facilities, however, were returned to the company once the war was over.¹⁴⁷

On 19th July 1988, IJPC was attacked for the last time by the Iraqi Air Force.¹⁴⁸ A day before, Iran had accepted U.N Resolution 598, thus ending the eight year old war which had inflicted so much damage to both sides, especially Iran. It was probably the

war which effectively killed off IJPC, as it caused a long delay (8 years), and at least \$1 billion damage to it.¹⁴⁹ On the same day (19th July), a Mitsui Bussan executive, reflecting on the new developments, stated that IJPC's future would be discussed with the Iranians, but there was no question of any further investment in the project by his company.¹⁵⁰

As this section demonstrated, the war not only brought the construction to a halt, but also affected all aspects of the joint venture; financing, management, organisation, and all other activities. Moreover, the bombing raids and corrosion damaged the plants already installed, adding further costs and delaying the completion of the project.

7.0- The Prospects for IJPC After the War

In late 1988, ICDC sent a team to inspect the site. In its report, the team declared the IJPC a write-off, arguing that it would cost another \$2 billion on top of the \$4.5 billion (at 1988 prices, and 1000% more than the original estimates) already spent to repair the war damage and complete the project.

But Ahmad Rahgozar, the Managing Director of NPC, disputed this amount, saying that only \$1 billion would be enough.¹⁵¹ Furthermore, the Iranian experts were arguing that the Japanese had not carried out a thorough study and were being pessimistic about the future of IJPC. They added that all corrosion and damage could easily be repaired, and the technology, which by then had become obsolete, be modernised. The Iranian engineers also stated that the first unit could be completed in 18 months and the whole complex comprising of 16 units would be operational in 38 months.¹⁵²

There was another area of disagreement regarding the future profitability of IJPC.

NPC was contending that LJPC's sales would be at least \$2 billion per year, while ICDC was arguing that, at best, the project's revenues would hardly reach \$1 billion annually.

7.1- The Dissolution of LJPC

ICDC, which was in total disagreement with NPC about the completion costs and the profitability of the project, decided in early 1989 to pull out of LJPC. NPC, which for political, social, and national economic reasons wanted to finish the construction of LJPC as soon as possible, was willing to allow ICDC to pull-out provided the latter accepted its terms. The terms of NPC were the payment of fair compensation by ICDC and its agreement to complete the project as a contractor.

In an interview, A. Rahgozar indicated that if ICDC and NPC agreed on the abrogation of the Basic Agreement of 1971, the approval of the Majlis would not be required, and even if it was, it would be likely to agree. He added that the 1985 Majlis rejection was prompted by the withdrawal of Japanese technicians from the site and not by objections to the Supplementary Agreement itself.¹⁵³

The negotiations for the "Friendly Separation", as both sides liked to call it, continued through the first half of 1989, but several issues were prolonging the talks. These obstacles included NPC's conditions mentioned above, plus Iran's insistence on linking the liquidation talks to Japan's promise to help her reconstruction efforts and, finally, Mitsui Bussan's claims for insurance payments from MITI.¹⁵⁴ The last issue was particularly problematic for ICDC.

ICDC was arguing that, after the signing of the liquidation agreement, the Y330 billion invested up to 1981 would become "uncollectable". And out of that amount, Y200 billion, including ICDC capital subscription and loans to LJPC, should be covered by

MITI's trade insurance. MITI, however, stated that it had no intention of approving any insurance claim for ICDC's investments made after 1980. Therefore, the upper limit for its insurance payment would be Y166.2 billion, and Mitsui Bussan had to bear the difference between Y330 bn and Y166.2 bn (i.e 163.8 bn).¹⁵⁵

Fortunately for Mitsui Bussan, several developments in Iran helped to speed up the negotiations. First, the economic situation in Iran was deteriorating due to the shortage of foreign currency and high inflation rate. Second, the newly elected government led by President Hashemi Rafsanjani (August 1989), realised that as long as the thorny issue of IJPC remained unsettled, no Japanese co-operation for reconstruction and large scale investments would be forthcoming, and therefore, it was in Iran's long term interest to allow ICDC to pull out.

Initially in the negotiations of Summer 1989, NPC was asking for Y300 billion (\$2.4 bn) as compensation for releasing ICDC from their obligations under the Basic Agreement, while Mitsui was offering only Y125 billion (\$900 bn). However, ICDC added another Y5 billion as its last offer and this was accepted by NPC (see Appendix A for financial details of the agreement).

Thus, ICDC agreed to pay Y130 billion (half in cash), and Mitsui Bussan offered \$500 million in credits to Iran and promised to purchase \$150 million of oil products from her with advance payment.¹⁵⁶ It seems that NPC dropped its other condition, that ICDC must finish the project as a contractor because there was no mention of it in the final agreement, and the former turned the project over to European companies for completion. The Iranians also announced that no ratification by the Majlis was required and the agreement would go into effect immediately.

On the evening of 8th October 1989, after two days of meetings in Tehran

between the Mitsui Bussan President, Ejiri, and A. Rahgozar, the M.D of NPC, an agreement called "The Friendly Separation Agreement" was signed which dissolved IJPC, and freed ICDC from nearly 18 years of involvement in the project.¹⁵⁷ The agreement stipulated that all shares of IJPC held by ICDC would be transferred to NPC.¹⁵⁸ Appendix A shows the full details of the Agreement.

Finally, on 8th February 1990, both NPC and Mitsui Bussan announced that by the transfer of the compensation fund to the Iranian account, the process of Friendly Separation had been completed. Iran expressed its hope that this would pave the way to building a new relationship between the two countries.¹⁵⁹ Later on an Iranian negotiator revealed that it had taken the Iranian government more than thirty meetings and a decision by President Rafsanjani himself to terminate the joint venture.¹⁶⁰

7.2- The State of the Project at the Time of Separation

Just after the signing of the Friendly Separation Agreement of November 1989, NPC renamed the former joint venture Bandar Imam Petrochemical Company (BIPC) and appointed Krupp-Lummus-Bandar Imam (KLBI), a consortium made of Krupp Koppers GmbH, and Lummus Crest B.V., to carry out a detailed technical survey (D.T.S) to determine the extent of the damage caused by the war and corrosion, and to produce an estimate of the cost of completion of the project.

KLBI presented its comprehensive report in September 1990 to BIPC. The essence of this report was that during the suspension and war years (1979-88), most of the heavy, sensitive, and processing machinery belonging to all units had been kept in excellent condition and could be used for the completion of the complex. The report added that shortages were mostly of construction machinery like loaders, cranes,

bulldozers, compressors, and other general items. But almost all of the special plant and machinery for building the petrochemical complex itself had remained intact in boxes and containers. Finally, the KLBI report concluded that the total cost for repairing the damage, completion and initial operations of the complex would be about DM2489.2 million (\$1549.8 million, or IRs104546.4 million, both at 1990 rates of exchange). Table 7.18 displays the KLBI estimates for the completion of each of the units of the BIPC complex.

Table 7.18: Estimates of Costs of Repairs and Completion of BIPC's Petrochemical Complex by KLBI (Sep 1990)

Plant	In Millions of DM	Percentage %
AR	313.7	12.6
BD/SR	254.0	10.2
CA/SP/DN	390.0	15.7
HDPE	116.0	4.7
LDPE	117.2	7.1
OL	274.8	11.0
PP	126.0	5.1
VC/DC	180.0	7.2
NF-1	73.9	3.0
NF-2, UT-A, CF	140.0	5.6
UT-A (Remaining)	45.7	1.8
UT-B (Remaining)	134.0	5.4
CF-Plant (Remaining)	233.3	9.4
Central Lab.	30.6	1.2
Total Sum	2489.2	100.0

Source: BIPC, March 1993.

7.3- The Reconstruction of the Petrochemical Project After the Dissolution of IJPC

Apart from producing the D.T.S, KLBI was also commissioned to implement Phase One of the reconstruction of the BIPC petrochemical complex which included repairing and completion of NF2, UT (water electricity, and steam), and CF (Common Facilities) Units. Moreover, in December 1989, BIPC appointed Technip Engineering of France as the managing contractor (MC) to administer the detailed technical survey and implement Phase Two of the reconstruction of the petrochemical complex.

7.3.1- Phase One of Reconstruction

The rebuilding and completion of NF2 Unit and parts of the UT and CF Units under Phase One were completed and became operational in March 1991. The capacity of the NF2 Unit is 60,000 barrels a day (b/d), and currently is being fed by 36,000 b/d of LNG from oilfields Number 700 and 800. Moreover, the daily productions of 1,000 tons of propane, 860 tons of Butane, and 670 tons of pentane and heavier liquid gases are stored in the Unit.

7.3.2- Phase Two of Reconstruction

In the initial survey, KLBI estimated that the reconstruction and completion of the petrochemical complex would take until September 1994. However, after the appointment of Technip as the MC for Phase Two, and detailed negotiations with the eight unit contractors (UC), a new timetable for the completion of the 16 units of the complex was drawn up. Table 7.19 shows the effective date of agreements between BIPC and the UCs and the commissioning date for each unit. It is worth mentioning that at the time of writing, for various reason (mainly shortage of foreign currency), the

reconstruction of the 16 units have not progressed according to plan.

Finally, after the takeover of IJPC by NPC and creation of BIPC, the number of units and their capacities which was a constant source of dispute between ICDC and NPC, and caused so many delays and increases in construction costs, were decided and are shown in Table 7.20.

Table 7.19: The Effective Dates of Agreements for Start of the Reconstruction of Various Units of BIPC Petrochemical Complex and Their Commissioning Dates.

Unit	Effective Date	Commissioning Date
AR	29.06.92	21.07.94 - 22.11.94
BD/SR	20.01.92	29.12.93 - 03.05.94
SP/CA/DN	22.11.91	03.11.93 - 07.02.94
HDPE	01.11.91	16.11.93 - 20.04.94
LDPE	01.11.91	23.11.93 - 27.04.94
OL	18.09.91	18.08.93 - 29.11.93
PP	01.11.91	09.12.93 - 12.05.94
DC/VC	23.12.91	28.12.93 - 28.04.94
NF-1	02.12.91	04.10.93 - 28.02.94
UT-A/B	02.12.91	18.03.93 - 20.01.94
CF	02.12.91	08.04.93 - 02.04.94
PVC	23.12.91	29.04.94 - 12.07.94

Source: BIPC, March 1993.

Table 7.20: Various Units of BIPC Petrochemical Complex, Their Products, and Planned Capacities (1)

Unit	Process/ Final Product	Capacity (Ton/Year)
NGL Fractionation (NF)	Feedstock for the Olefin Unit, LPG	1,900,000
Olefin (OL)	Ethylene, Propylene, Butadaine	311,000 115,000 25,000
Chloralkali (CA)	Chloride Caustic Soda	230,000 240,000
Ethylene Di Chloride (EDC)	Ethylene-Di-Chloride	130,000
Vinyl Chloride Monomer (VCM)	Vinyl-Chloride-Monomer	175,000
Aromatic (AR)	Benzene Xylene	270,000 140,000
Low Density Polyethylene (LDPE)	Low-Density-Polyethylene	100,000
High Density Polyethylene (HDPE)	High-Density-Polyethylene	60,000
Poly Propylene (PP)	Poly-Propylene	50,000
Synthetic Rubber (SR)	Synthetic Rubber	40,000
Salt Reclamation from Sea	Salt	500,000
Poly Vinyl Chloride (PVC)	P.V.C	175,000
Utilities (UT)	Water Electricity Steam	

Note:

(1)-The Common Facilities (CF) Unit consists of all machinery, and facilities commonly used by other units. These include: harbour facilities, tanks, pipes, sewage, fire-fighting equipment, buildings, roads, etc.

Source: BIPC, March 1993.

8.0- Conclusion

In this chapter the history of Iran Japan Petrochemical Company from exploratory talks in 1968 to its dissolution in 1990 was discussed.

It was espoused that factors such as Japan's and Mitsui Bussan's desire to gain access to Iranian oil reserves and Iran's ambitions for industrialisation led to the setting up the joint venture in 1973.

The joint venture, however, faced many problems from the very beginning. These difficulties mainly stemmed from the different managerial and organisational styles of the two main partners: Mitsui Bussan and the National Petrochemical Company, their dissimilar modes of ownership and their contrasting expectations from the joint venture. These problems which were exacerbated by the two oil shocks of the 1970s, the Iranian revolution and the Iran-Iraq War precipitated many disagreements between the partners and caused long delays in the completion of the petrochemical complex.

In 1989, the Japanese partners, believing that after seventeen years of delay in the completion of the complex and the damage induced by the war, the project was no longer economical, advocated a pull-out. Iran which needed the co-operation of the Japanese government and business in rebuilding its war-torn economy agreed to their demand and so the petrochemical joint venture was finally dissolved in 1990. Since then, the National Petrochemical Company, with the co-operation of European companies, has been reconstructing the complex hoping to complete it by 1994.

In the next chapter, the factors which are believed to have led to the failure of IJPC will be discussed.

Notes

- 1.The Constitution of the Supreme Council of the Petrochemical Industries, approved by the Council of Ministers, 24/12/1963.
- 2.Provision Number 64, The Supplementary Act for the Amendment of the 1964-65 Annual Budget, approved by Majlis on 26/7/1964.
- 3.The Petrochemical Industries Development Act, the Majlis, 15/7/1965, and the Article of Association of the National Petrochemical Industry, Council of Ministers, 3/8/1966.
- 4.National Petrochemical Company Report to the Supreme Council of the Petrochemical Industries, Number 1/2526, 1/1/1968.
- 5.Ibid
- 6.Parts of these discussions are based on interview with Dr Bager Mostofi, former Chairman of NPC and IJPC, on 3 June 1992 in London.
- 7.See Chapter Three for details.
- 8.Misato Yasunobu, " The Iran Petrochemicals Project: The Suffering of Mitsui Bussan", Nihon Keizai Shinbunsha, Tokyo, 1981, p.41.
- 9.For details of the trade dispute see Chapter Three.
- 10.Misato, op cit, p.46.
- 11.Interview with Dr Mostofi, op cit.
- 12.See Chapter Three for details of Japanese investments in the Middle East.
- 13.See Barrett and Therivel (1991) op cit, chapters 2-8 for environmental problems associated with the rapid industrial growth in Japan in the 1960s and the Japanese government's policy to reduce industrial pollution.
- 14.Louis Turner, and James M.Bedore, "Middle Eastern Industrialisation: A Study of Saudi and Iranian Downstream Investments", published for the Royal Institute for International Affairs (RIIA) by Saxon House, 1979, p.147.
- 15.Mitsui, "The 100 Year History of Mitsui & Co Ltd; 1876-1976", Mitsui & Co, Tokyo, 1977, p.249.
- 16.Turner (1979), p.174.
- 17.Ibid.

18. This section draws heavily from Misato, op cit, pp48- ; and Tahahashi, Kazuo, " A Complex Issue: The Iran Japan Petrochemical Project", paper presented at the Conference on the Japanese Approach to the Contemporary Middle East, SOAS, 4-5 October 1990.

19. See Roberts (1973), op cit, p.444, for the close connections between Sato and Mitsui Bussan. This may have had some influence on the Japanese government's decision to back the petrochemical joint venture between Bussan and Iran.

20. See Chapter Two for the activities of JPDC.

21. Please note that the information on which this section has been written is from Japanese press and used in Misato's book. And therefore, any arguments about the economic feasibility of petrochemical production or viability of oil production in Lorestan is essentially from a Japanese point of view which may not be correct. As we shall see later, NPC officials truly believed that operations of a large scale petrochemical plant was feasible because of the availability of cheap feedstock which is the main determinant of a profitable petrochemical operations (see Chapter Eight).

Moreover, as we saw in Chapter Two, due to several factors such as lack of experience and trained personnel, Japanese oil explorations overseas like those by JPDC have had a poor record in discovering large oil reserves.

22. Interview with Dr Mostofi, op cit.

23. See Chapter Five for the establishment of Kyokuto Petroleum Industries Ltd by the Mitsui Bussan.

24. Another reason could be that the Japanese government wanted to keep the balance between various groups and not to allow any one group to gain an advantage over others should the exploration be successful.

25. See Roberts (1973) op cit p.444 for the relationship between Kishi and Mitsui Bussan.

26. This argument suggested by Misato (op cit p.70) is very unlikely to be valid. First, it is a known fact that Mitsui Bussan has a very comprehensive information gathering system which supplies information to all departments, and it seems unlikely that the Oil Department was unaware of negotiations between the Chemical Department with NPC over the construction of a petrochemical plant in Iran. Moreover, the President of Mitsui Bussan, Wakasugi, was involved in both projects, and it is very improbable that he did not mention negotiations about the proposed petrochemical joint venture to the Oil Department when they first approached him about the Lorestan bidding.

27. See Chapter Two for MITI's policy for the Japanese oil industry and its policy regarding importation of processed raw materials, including oil, to Japan.

- 28.Misato, op cit, p.93-94.
- 29.ibid, p.89.
- 30.Ibid, p.93.
- 31.Interview with Dr Mostofi, op cit.
- 32.Misato, op cit, pp.98-99.
- 33.Ibid. Also see Fesharaki (1976) op cit, pp.73-76 for the details of the establishment of INEPCO.
- 34.See Fesharaki, ibid.
- 35.The Basic Agreement of Co-operation between the National Petrochemical Company of Iran and Mitsui & Co, 19 October 1971.
- 36.See Chapter Nine for problems associated with signing of a joint venture's legal agreement before first finalising its business plan.
- 37.Misato, op cit, p.105.
- 38.Ibid, p.106.
- 39.Ibid.
- 40.Misato, op cit, pp127-128.
- 41.Report of the Board of Directors to BIPC Shareholders, July 1992, p.12
- 42.The information on this section is from the Basic Agreement between the NPC and the Mitsui & Co. as passed by the Majils on 22/10/1972.
- 43.This section is based on the report of the BIPC's Board of Directors meeting on 15/7/1992, File I.A.C.
- 44.This section is based on information from the IJPC's Main Budget Account for 1976, Project I.A.K.
- 45.Records of the Extraordinary General Meeting, 2/8/1975 and Board of Directors, 31/8/1976, Iran Japan Petrochemical Company.
- 46.Records of the meeting of the Board of Directors, Iran Japan Petrochemical Company, 31/8/1976.
- 47.Misato, op cit, pp173-175. It was (is) Japanese banks as well as other Western banks rule to ask for sovereign guarantees (government or central Bank) when extending loans to companies in the developing countries.

48. See Misato, op cit, pp-176-79 for efforts of Japanese and Iranians to find a solution to the Ansari objections. As a result of the agreement between Kawamoto, Ansari and NPC officials, the Japanese banks agreed to NPC being the guarantor of Y17,800 million direct loans, and the Iranian government guaranteeing a Y65,000 yen loan plus the low interest loans. This arrangement, however appears to have been a costly one for the Iranians. In fact, before the new agreement, the Y17,800 million direct loan was part of a low-interest loan from the Japanese to the Iranian government. Under the new arrangement, however, the direct loan carried a higher interest rate. For details of various loans see Table 7.

49. Clause 18, The Article of Association of the Iran Japan Petrochemical Company, 6/4/1973.

50. Clause 5, the Basic Agreement between the National Petrochemical Company of Iran and Mitsui & Co., 19/10/1971.

51. Ibid.

52. Report of the Board of Directors to the General Meeting of the Shareholders of Bandar Imam Petrochemical Company [formerly IJPC], July 1992, p.79.

53. Misato, op cit, p?????.

54. This section draws from Misato, op cit, Chapter 4.

55. Misato, op cit, p.151.

56. Ibid.

57. Misato, op cit, p.155.

58. Ibid, p.153.

59. Ibid. The Department, however dropped the idea of building a petrochemical complex in Thailand in 1974 on the grounds of uncertain markets for its products after the sharp rise in oil prices.

60. By now, the complex was composed of 16 plant units, and therefore, 16 specialised offices were required.

61. Misato, op cit, p.163-66.

62. Ibid.

63. Ibid, pp167-168. After the Iranian acceptance, five Japanese engineering companies; Toyo Engineering (TEC), Chyoda Kakou Kensetsu, Mitsui Shipbuilding, Hitachi Shipbuilding, and Ishikawajima Harima Heavy Industries (IHI) were commissioned as unit contractors (UC), and the 16 plants were divided among them. Moreover, other engineering companies appointed as field contractors (FC) who carried out the actual construction of the

plant units.

64. Report of the Board of Directors to the General Meeting of the Shareholders of Bandar Imam Petrochemical Company (formerly IJPC), July 1992, p.83.

65. Ibid.

66. Clause 14, Part 3, The Basic Agreement (1971).

67. BIPC Report (July 1992), op cit, pp.84-85.

68. Ibid.

69. Japan Chemical Week, August 1978, p...???

70. Even at this time, Mitsui Bussan was still making money out of the joint venture by taking the shipping of plants and machinery from Japan to Iran out of the contractors' hand and delivering it on a commission basis.

71. Misato, p.181.

72. Ibid, p.191.

73. Ibid, p.183.

74. Misato, p.203. The rates of exchange are derived from various reports of the Central Bank of Iran.

75. Japan Chemical Week, August 1978, p...???

76. It was Bazargan, who sold a small consignment of petroleum products to Idmetsu Kosan during the oil nationalisation dispute with Anglo Iranian Oil Company in the early 1950s.

77. Misato, op cit, p.219. The term amakudari meaning "Descent from Heaven" is used when a retiring Japanese bureaucrat is given a top management job with one of the Japanese companies. The main purpose of this exercise is to enable the company to establish closer contacts with the government and especially the Ministry responsible for that industry. On the other hand, it enables the Ministry concerned to find jobs for its outgoing officials who usually retire at a relatively early age to open the way for younger upcoming bureaucrats.

78. Ibid, p.225.

79. Misato, pp.240-42.

80. Quoted in Yoshitsu Michael M., "Caught in the Middle East: Japan's Diplomacy in Transition", Lexington Books, 1984, p.43.

81. Ibid, p.48.

82.This section is based on the information provided by BIPC, March 1993.

83.The Japanese share of the extra paid in capital, i.e, IR6 billion (around Y2.098 billion) as mentioned above was provided by the contributions from the OECF.

84.After the revolution the Ministry of Oil was established with responsibility for all oil related activities and managing of NIOC. The Minister of Oil also acts as the Chairman and Managing Director of NIOC. Although NPC is still nominally a subsidiary of NIOC, in practice its top management reports directly to the Oil Minister.

85.Project Status Report, IJPC, 19 December 1980.

86.Ibid.

87.Ibid.

88.This section is based on the Report of the Board of Directors to the Extraordinary General Meeting of BIPC Shareholders, July 1992, pp.123-24.

89.Ibid, pp.124-25.

90.By the end of June, the following number of Japanese were present at the IJPC site in Bandar Imam Khomeini:
IJPC personnel: 26, Contractors: 318, Others: 21, Ibid.

91.BIPC (July 1992) op cit, pp.125-26.

92.Ibid, p.127.

93.Ibid, p.83.

94.Ibid, p.84.

95.Ibid.

96.Ibid, p.87.

97.Ibid, p.90.

98.The Japan Economic Journal, February 10, 1981, p.2.

99.Ibid.

100.Yoshitsu (1984), p.90.

101.Japan Economic Journal, March 10, 1981, p12.

102.Ibid.

103.Yoshitsu (1984), p.93.

- 104.Ibid, p.94.
- 105.Ibid.
- 106.Ibid.
- 107.J.E.J., October 20, 1981, p.16.
- 108.Ibid.
- 109.Japan Economic Journal, October 27, 1981, p.15.
- 110.Ibid.
- 111.Japan Economic Journal, November 30, 1981, p.11.
- 112.Yoshitsu (1984), p.95.
- 113.Ibid, p.96.
- 114.The following discussion is based on Yoshitsu (1984), pp.96-101.
- 115.Japan Economic Journal, March 9, 1982, p.12.
- 116.Ibid.
- 117.Ibid.
- 118.Ibid.
- 119.Japan Economic Journal, March 23, 1982, p.3.
- 120.Japan Economic Journal, April 20, 1982, p.2.
- 121.Japan Economic Journal, May 20, 1982.
- 122.Japan Economic Journal, March 30, 1982, p.4.
- 123.Ibid.
- 124.Japan Economic Journal, June 1, 1982, p.2.
- 125.Japan Economic Journal, May 24, 1983, p.1.
- 126.Japan Economic Journal, October 4, 1983, p.2.
- 127.Ibid.
- 128.Japan Economic Journal, November 22, 1983, p.2.
- 129.Japan Economic Journal, December 6, 1983, p.4.
- 130.Japan Economic Journal, February 21, 1984, p.2.
- 131.Japan Economic journal, September 4, 1984, p.15.

132. Japan Economic Journal, October 2, 1984, p.2.
133. Japan Economic Journal, October 30, 1984, p.16.
134. Ibid.
135. Ibid.
136. Japan Economic Journal, March 5, 1985, p.2.
137. "Iran and Japan", a research publication by the Trade Research and Studies Institute, Ministry of Trade, Iran, 1365 (1986), p.298, (in Persian).
138. Japan Economic Journal, July 9, 1985, p.2.
139. Quoted in the same source as note 57 above.
140. Japan Economic Journal, February 22, 1986, p.17.
141. Ibid.
142. Middle East Economic Digest (hereafter MEED), Special Report, November 1986, p.2.
143. Middle East Economic Digest, 29 July, 1988, p.17.
144. BIPC (July 1992), op cit, p.89.
145. Ibid.
146. BIPC (March 1993).
147. Ibid.
148. Middle East Economic Digest, 29 July 1988, p17.
149. Ibid.
150. Ibid.
151. Middle East Economic Digest, 24 February 1989, p21.
152. Ibid.
153. Ibid.
154. Japan Economic Journal, March 25, 1989.
155. Ibid.
156. Takahashi, Kazuo, "A Complex Issue: Iran Japan Petrochemical Project", a paper presented at the Conference on the Japanese Approach to the Contemporary Middle East, School of Oriental and African Studies (SOAS), 4-5 October 1990, pp.12-13.

157.Mitsui Trade News, November/December 1989.

158.Ibid.

159.Takahashi (1990), *ibid.*

160.Ibid.

PART THREE

CHAPTER EIGHT

WHY IJPC FAILED ?

1.0- Introduction

In this chapter, the factors which are believed to have led to the failure and the eventual dissolution of the Iran Japan Petrochemical Company are analyzed. However, first, the strategies of the Iranian and Japanese partners, and their reasons for entering into the joint venture in the first place, the organisational characteristics of both firms, and the petrochemical industry will be briefly reviewed. Finally, the chapter will examine in detail the factors which, using Franko's terminology, led to the "instability" of the joint venture, i.e. the pull-out of the Japanese partners and the dissolution of IJPC.

2.0- Reasons for the Establishment of IJPC

In Chapter One, section 3.0, the theoretical framework for analyzing the case of IJPC was set up. It was hypothesised that a major cause of the establishment of joint ventures is resource scarcity¹ or resource interdependence². Moreover, this theory argues that reducing uncertainty is a very strong factor in the creation of joint ventures.

It was also hypothesised that in order to understand why some joint ventures are successful and some are not, one must look into the strategy of the parent firms, the reasons for entering into the joint venture in the first place, and the firms' organisational characteristics as well as their industries.

Accordingly, in Chapters Two and Three it was argued that the major factor behind the Japanese enthusiasm for a joint venture with Iran was access to secure and stable oil supplies. It was stated that due to the fast expansion of heavy and petrochemical industries after the Second World War, Japan had become almost totally

dependent on imported oil. More specifically, she was importing up to 80% of her petroleum needs from the Middle East, especially Iran, which was supplying around 45% of Japan's imports in the late 1960s/ early 1970s. However, due to the peculiar make-up of the Japanese oil industry, going back to the origins of the industry in the last century, Japan did not have any fully integrated oil company active in overseas oil exploration and development. Moreover, as a result of the U.S policy during the Occupation period, Japan had to rely on major international oil companies, particularly American, for a substantial share of her petroleum imports. This situation was causing concern among some Japanese politicians and businessmen who wanted Japan to have direct access to overseas oil resources.³

On the other hand Iran, a major oil producer and exporter, was, for social, political, and economic reasons, looking for ways to develop her industries. And the best way to achieve this aim was the forward integration of the oil sector by a establishing petrochemical industry and export refineries. As discussed in Chapter Four, due to the backwardness of the Iranian economy, small oil revenues and, the total dominance of the Anglo Iranian Oil Company over Iran's oil industry, she did not have the opportunity to develop economically. After the nationalisation of the petroleum industry in 1951 and the subsequent oil agreement of 1954 with the Consortium, Iran gained nominal control over the industry and her revenues increased substantially. Following these developments, several laws were enacted to promote the petrochemical industry, and the National Petrochemical Company of Iran (NPC) was created as a vehicle for the development of the industry.

At the beginning, NPC concentrated primarily on the domestic market by establishing several small-scale petrochemical plants. Later on, however, with rapid

industrialisation becoming the top priority of successive development plans, and the realisation that domestic oil reserves would soon run out, NPC was instructed to develop an export oriented petrochemical industry; utilising the wasting associated gas. In order to implement such a programme, NPC needed a foreign partner(s) which would provide the required technology, capital, and large international markets. A foreign partner was also needed in order to reduce the risks associated with building a large and integrated petrochemical complex industry and the risks involved in entering into foreign markets.

For various reasons discussed in Chapter Seven, Japanese companies were deemed to be the most suitable partners. And Mitsui Bussan, one of the Japan's largest trading companies, appeared to fit such criteria.

In Chapter Five, the origins, development, and organisational characteristics of Mitsui Bussan were discussed in detail. It was learnt that the Mitsui Group had a few distinct features which set it apart from its nearest rivals, especially the Mitsubishi Group. First, it had a decentralised organisation and relied on the individual initiative of its employees, particularly in the foreign investment field. Second, the group was strong in trading and light industries, but weak in heavy industry. Third, the Group, especially Bussan, had more overseas investments than any other Japanese group or general trading company. Finally, in the post-war period it was well behind its rivals in the fast expanding oil business. This last factor, probably more than any other was instrumental in persuading Mitsui to consider a joint venture with Iran.

Furthermore, it was explained in Chapters One and Five that the Japanese *sogo shosha's* main line of business is trading. They undertake investment in productive businesses, particularly foreign investment (in the form of joint ventures), to generate trading opportunities by selling plant and machinery, raw, and intermediate materials to

the joint venture and buy its output for domestic sales or exports.

So in Chapters Two to Six, the reasons for establishing the joint venture between Mitsui Bussan and NPC were examined. In Chapter Seven, the history of the company, from the exploratory talks in 1968 to its dissolution in 1990, was described in detail. More importantly, the characteristics of the management of the joint venture, during nearly two decades of its life was analyzed.

In order to complete our analysis of LJPC according to the theoretical framework of Chapter One, one needs to know what factors caused the joint venture to become "unstable": i.e. brought about its dissolution.

3.0- Causes of the Dissolution of LJPC

In Chapter One it was hypothesised that a major cause of a joint venture's instability is a change in the business strategy of its parent companies⁴. Moreover, it was elaborated that the purpose of a joint venture is not to last, but rather to contribute to the fulfilment of the goals of its parents. This chapter will attempt to establish whether any changes occurred in the business strategies of either NPC and/or Mitsui Bussan which led to the break-up of LJPC, or whether the joint venture was dissolved after fulfilling (or failing to fulfil) the goals set by its parents. In addition, the factors, which in the opinion of the author of this study, caused the partners to consider terminating the joint venture. Finally, the developments within LJPC from two angles: economic viability (feasibility), and the management style of its partners (influenced by their modes of ownership) will be examined.

3.1- Feasibility

The Japanese partners, from the early discussions in 1969 to the break-up of IJPC, were claiming that a petrochemical plant in Iran would not be feasible: i.e. it would cost around 40% more to build petrochemical plants in Iran than it would in Japan. In fact, this claim was a source of constant disagreement between the two partners, causing long delays in the start-up of the construction, completion, and eventually, the dissolution of the joint venture. In this section, the cost structure of the petrochemical industry will be briefly discussed to determine whether the construction costs of petrochemical plants in Middle East are higher than the similar ones in advanced countries.

The production costs of petrochemical plants vary greatly, depending on the type of product, the process of production and raw materials used, the plant size, its location and its investment costs. Wages and the productivity of the manpower employed makes a very small contribution to the cost of production. The following sub-sections will examine the contribution some of these factors make to the final cost of petrochemical products within an international comparison and then will discuss the case of IJPC.

3.1.1- Cost of Raw Materials

The share of raw materials in the production costs of various petrochemical products depends on the energy intensiveness of these products and how far downstream they are processed. More precisely, the effect of raw material costs decreases for products further downstream, whose production involves extensive processing before becoming ready for use as final products. For instance, before the first increase in oil prices in 1973, the cost of raw materials contributed 40-60% (including 25% ROI) to the production cost of many petrochemical products, particularly synthetic resins, plastic

materials, fertilisers, and other intermediate products.⁵

After the rise in oil prices in 1973-74, the share of raw materials escalated to between 50% and more than 75% (including 25% ROI) of the total cost of the production of petrochemical products. This situation can perhaps be best explained with the change in the production cost of ethylene: the most basic of petrochemical products. As Table 8.1 shows, for a 300,000 tonne per year ethylene cracker (the same as the IJPC's capacity of 300,000 tonne/year), that came on stream in 1977, the cost of raw materials was 6.13 times that of an equivalent one operating in 1972. In fact, by 1977, raw materials for ethylene production had become the dominant component of production costs, rising from 42.2% in 1972 to 71.6% in 1977 (Table 8.1). As a result of the rise in production costs, the prices of petrochemical products also rose by about 200-300% in 1974, and increased steadily until 1979. The second oil crisis in that year caused prices to rise steeply, but not as much as they had done in 1974.

Clearly, this development in 1973-74 tilted the viability of petrochemical production in favour of oil producing countries like Iran which could supply petrochemical plants with very low-cost raw materials like natural gas, naphtha, etc.

3.1.2- Construction Costs

After 1974, as a result of the rise in oil prices and worldwide inflation, the construction costs of petrochemical plants together with raw materials rose relative to other factors of production. As Table 8.1 shows, fixed capital costs for the 300,000 tonne/year ethylene cracker mentioned above, increased by 1.67 times as compared to the same plant in 1972. Obviously, the rate of increase in capital cost was well below the rate for raw materials which had risen by 6.13 times. This caused the share of the capital

cost to decline in relative terms from 39.5 to 19.3 per cent of total production costs. The effect of increases in these two factors of production was that the overall costs of production for petrochemicals had swelled by 3.6 times from 1972 to 1977.⁶

This disproportionate rise in the costs of the two most important factors of production for petrochemicals and the steep rise in prices for petrochemical products does not support ICDC's argument in 1974 that due to a rise in construction costs, the joint venture would be uneconomic. To be sure, there were others, like Louis Turner (1979), who were claiming in the later part of the 1970s and early 1980s that petrochemical plants operating in the Middle East would be unviable.

Table 8.1: Increase in Olefins Manufacturing Costs

	Naphtha*	Naphtha*	Naphtha*
Capacity t/y Ethylene	300,000	300,000	300,000
Economic Conditions	Prevailing in 1972	Prevailing in 1977	Prevailing in 1977 Unit erected in 1972. Investment in 1972.
Fixed Capital Costs (US\$m)	104	184.3	104
Manufacturing Cost (US\$,000)			
Raw Materials (%) +	21,150 (42.2)	129,600 (71.6)	129,600 (78)
Utilities	1,080	2,200	2,200
Catalysts & Chemicals	820	1,100	1,000
Manpower	500	1,100	1,100
Other charges	6,750	12,000	12,000
Amortization & return +	19,800 (39.5)	35,000 (19.3)	19,000 (12)
Total Manufacturing Cost	50,100 (100)	180,900 (100)	165,700 (100)

Notes: (*)- Naphtha Steam Cracking.
(+)- Percentage of total costs.

Source: UNIDO, " First Worldwide Study on the Petrochemical Industry: 1975-2000", UNIDO, ICIS.83, December 1978.

Notwithstanding, the above data applies to petrochemical plants in industrialised countries, and critics of the oil producing countries' plans for the expansion of their domestic petrochemical industries do have a case.

In reality, capital investment costs for oil related industries are much higher in the developing countries than in Japan and the United States, where they are the lowest. In the oil producing countries of the Middle East, for reasons discussed below, investment costs are between 50-110 % higher than on the U.S Gulf of Mexico Coast (which is used as a reference point for international comparisons in the oil processing industry) for petrochemical plants of the same size.

These higher costs result from a combination of various factors: the delays in executing projects, insufficient supply of native skilled manpower, almost complete lack of engineering services, all manufactured materials and equipment having to be imported from industrialised countries thousands of miles away and assembled under harsh climatic conditions, and inadequate physical and social infrastructures. The combination of these factors is referred to as "location factor"⁷, which is used by engineering firms in their calculations for investment costs in various countries around the world.⁸ Table 8.2 demonstrates the disadvantageous position of the oil producing developing countries in investment costs related to location factor for petrochemical plants when compared to industrialised countries.

Table 8.2: Installed Cost for petrochemical Plants in 1980 (\$/ton/year at 100% load factor)

Location		US Gulf	W.Germany	Japan	Indonesia	Mexico	Qatar
Location Factor		(1.0)	(1.15)	(0.9)	(2.1)	(1.25)	(1.5)
Product	Capacity range 1,000 t/y	Installed cost range \$/t/y	Installed cost range \$/t/y	Installed cost range \$/t/y	Installed cost range \$/t/y	Installed cost range \$/t/y	Installed cost \$/t/y
Ammonia from:							
methane	300-590	277-313	318-360	249-282	281-657	346-391	415-469
naphtha	300-590	317-356	364-409	285-320	665-747	396-444	475-533
DMT	75-300	883-1181	1015-1358	795-1063	1854-2480	1104-1477	1324-1772
Ethylene benzene	250-780	77-112	88-129	69-101	161-235	96-140	115-168
Ethylene-propylene*	225-680	611-802	703-922	550-722	1284-1684	764-1002	917-1202
Ethylene-propylene-butadiene-benzene +	225-680	787-1025	905-1179	708-923	1653-2153	984-1282	1181-1538
Ethylene glycol	90-360	153-234	176-270	137-211	321-492	191-293	229-352
Ethylene oxide	67-270	701-1006	806-1157	137-905	1472-2112	876-1257	1052-1509
HDPE	50-200	478-640	550-736	431-576	1004-1344	598-800	718-960
LDPE	50-200	692-1000	796-1150	623-900	1453-2100	865-1250	1038-1500

LLDPE	50-200	461-634	530-729	415-571	968-1331	576-792	691-951
Methanol from:							
methane	160-640	225-125	237-330	185-258	432-602	257-358	304-430
naphtha	160-640	125-225	258-373	202-292	472-682	281-406	337-487
PET from:							
DMT	22-90	828-1178	852-1354	745-1060	1738-2473	1034-1472	1242-1767
TPA	25-100	694-1116	798-1283	625-1004	1457-2344	867-1395	1041-1674
Polypropy- lene	45-180	799-1013	919-1165	719-912	1679-2128	999-1267	1199-1520
Polysty- rene	45-180	352-486	404-560	316-438	738-1022	439-608	527-730
PVC	150-500	654-998	741-1148	580-898	1354-2096	806-1247	967-1497
SBR	35-140	856-1331	949-1531	771-1198	1798-2796	1070-1664	1285-1997
Styrene	225-680	215-282	247-324	193-254	451-593	268-353	322-423
TPA	75-300	863-1117	993-1285	777-1005	1813-2346	1079-1397	1295-1676
Urea	245-860	91-136	104-156	82-122	190-295	113-170	136-204
VCM	180-730	311-414	257-476	280-372	653-869	388-517	466-621

Note: (*) - Cost/tonne ethylene-propane feedstock.

(+) - Cost/tonne ethylene from naphtha feedstock.

Source: UNIDO, 336/2, March 1981, op cit.

As the Table shows, Japan has the lowest investment cost (0.9) of any country in the world. Moreover, all oil producing developing countries have higher investment costs than Japan, U.S (whose value is at unity) and Germany: ranging from 1.25 for Mexico to 1.5 for Qatar and 2.1 for Indonesia.

The location related higher investment cost in the oil producing countries offsets the raw materials cost advantage which they enjoy compared to industrialised countries. More precisely, their cost advantage over the industrialised countries is limited to basic petrochemical products such as ethylene, methanol, HDPE, VCM, and styrene which have a higher raw materials content. In fact, the more downstream the petrochemical product (such as LDPE, PP, and ethylene oxide), the higher the differentials in unit investment costs (see Table 8.2).

In the above analogy, however, one is not comparing like with like. The data for industrialised countries relates to private chemical companies or chemical subsidiaries of oil companies whose only objective is profitability and an adequate return for their shareholders. Moreover, these firms operate in tax environments which are very different from those prevailing in oil producing developing countries.

Such companies usually have a large range of other investment opportunities to consider. Therefore, when they contemplate establishing a petrochemical plant at home or as a joint venture with oil producing countries, they use certain criteria to appraise and compare these investment opportunities. These criteria include 25% ROI, 10% depreciation charges, and working capital at 20% of fixed costs.⁹

Profitability and return on investment, however, are not the only criteria, or motivation, for the oil producing countries when they consider the development of their petrochemical industries. For example as shown in the case of Iran in Chapters Four and

Seven: social, political, as well as economic factors did play important parts in the decision to develop the country's petrochemical industry.

In the light of these non-economic considerations, it would be inappropriate to evaluate the petrochemical plans of these countries with criteria developed for private companies of industrialised countries with free market economies. Perhaps, cost-benefit analysis techniques, which give more weight to social factors and give proper consideration to the effects of such projects on the long-term economic developments of oil producing countries, should be employed.

If one, or some of the above mentioned assumptions were relaxed for the oil producing developing countries, their petrochemical plants would be highly competitive with those of the industrialised countries. For example, as Table 8.3 shows, if the former were prepared to accept 5% ROI on their petrochemical investments, the downstream products of such enterprises would be highly competitive with those of the latter.

One is not trying to "fiddle" with the numbers in order to make such investments to appear attractive. But rather, as mentioned before, the oil producing developing countries are trying to satisfy non-economic as well as economic objectives, and moreover, are well behind in their stage of economic and social development compared to the industrialised countries. Therefore, it would not be appropriate to use purely commercial criteria formulated for the highly industrialised countries to appraise their industrialisation plans.¹⁰

Table 8.3: Calculated Production cost for Selected Petrochemicals (\$/tonne- 1980)*

	US Coast	W.Germany	Japan	Indonesia	Mexico	Qatar
Feedstock price 1	25% ROI	25% ROI	25% ROI	5% ROI	5% ROI	5% ROI
Ammonia 2	317	345	375	195	126	151
DMT	1265	1417	1574	1178	842	928
Ethyl benzene	782	978	1168	680	556	618
Ethylene 3	630	---	---	375	282	290
Ethylene propylene 4	613	---	---	437	315	360
Ethylene-propylene-butadiene/benzene 5	733	948	746	---		
Ethylene glycol	739	919	1053	1107	708	846
Ethylene oxide	965	1282	1287	905	581	695
HDPE	1061	1380	1479	886	625	737
LDPE	979	1295	1367	849	560	658
LLDPE	951	1243	1311	848	606	710
Methanol	288	313	352	136	93	111
PET 6	1773	1808	2157	2592	1759	2235
PP	986	1129	1283	1112	727	944

PS	1068	1262	1474	1185	774	1051
PVC	1090	1311	1473	1699	796	1343
SBR	2079	2286	2335	1856	1255	1671
Styrene	893	1069	1231	938	604	831
TPA	1207	1381	1389	1201	876	972
Urea	169	197	349	168	109	134
VCM	798	996	1048	902	647	639

Notes: 1- Feedstock price calculated to include respective rate of return on investment (ROI).

2- At 85% load feedstock.

3- Ethylene production cost with ethane feedstock at current market price.

4- Ethylene production cost with ethane-propane feedstock at current market price.

5- Ethylene production cost with naphtha feedstock at current market price.

6- DMT feedstock.

Source: UNIDO (1981), op cit.

3.1.3- Plant Capacity

Another important factor which affects the production costs of petrochemical products is the size of the ethylene plant. As mentioned before, ethylene is the most basic petrochemical product from which many downstream products are derived. In 1972, doubling the size of a 150,000 tonne per year ethylene plant would lead to a 14% reduction in production costs (including 25% ROI, but not by-products benefits).¹¹ This doubling of capacity in 1972 would lead to the decline of the share of capital investment in total production costs from 43.6% for a 150,000 tonne/year plant to 39.5% for the 300,000 tonne/year plant discussed above. This reduction is due to the non-proportional relation that exists between investment costs and plant size which is characteristic of petrochemical plants and refineries. The lower production costs achieved by a 300,000 tonne/year plant would lead to a 17% reduction per tonne in the price of ethylene.¹²

As production costs became less sensitive to capital costs, oil producing developing countries (like Iran) with small domestic markets, found an opportunity to establish small to medium sized plants to produce ethylene and other commodity petrochemical products at competitive prices without the need to invest in large scale plants. This holds true to some extent in the case of Iran, where almost all of the small to medium sized petrochemical plants established in the 1960s and 1970s (some of them as joint ventures with foreign companies, like Farabi Petrochemical¹³, formerly a joint venture between Mitsubishi Corporation, Nissho Iwai, and NPC) are operating at profit, and moreover, are satisfying a growing domestic demand for petrochemical products.¹⁴

3.1.4- Labour Costs

Labour costs have far less influence on the total costs of production than other

factors of production. This is due to the low labour costs per unit of production in the highly capital intensive petrochemical industry. This is not, however, strictly true for petrochemical companies operating in the oil producing countries of the Middle East. There, due to the inadequate supply of indigenous work force, expatriate manpower has to be employed, which apart from being expensive, does not have a long term commitment to the company. These factors, plus cultural and linguistic problems, make the employment of foreign workers undesirable on a long term basis. (This issue will be discussed in the case of IJPC in later sections.)

4.0- The Economic Viability of IJPC

In this section, the argument developed in Section 3.1 on the feasibility of the petrochemical industry will be applied to IJPC to see whether the joint venture was viable or not.

As mentioned in Chapter Seven, two feasibility studies carried out in the late 1960s/early 1970s by Mitsui Bussan's Chemicals Division revealed that a large petrochemical plant in Iran would not be feasible. Moreover, The author of this study has also been informed by one source¹⁵ that a feasibility study commissioned by the Export-Import Bank of Japan in the early 1970s showed that the project was uneconomic, and on the basis of that study the bank was against involvement in the proposed joint venture. Nevertheless, the Exim Bank, under political pressure, extended large loans to the Mitsui Group and NPC.

Unfortunately, it has been impossible to access these feasibility studies. However, with help of the argument developed in Section 3.1, **each factor of production related to IJPC will be examined to find out which of them were in favour of the project and which**

were not. Finally, all these factors will be brought together to establish whether the project was uneconomic from the beginning, or whether other external factors made the joint venture unfeasible.

4.1- Raw Materials

As discussed in Chapter Seven, one of the main factors behind the interest of Mitsui Bussan in a petrochemical joint venture with Iran was the availability of cheap raw materials, especially natural gas, at very low prices. Moreover, it was explained that the Japanese petrochemical industry was naphtha based, which is more expensive and has a lower utility ratio for the production of ethylene, than natural gas. Also, due to the Japanese government's policy, the price of naphtha was higher in Japan than other industrialised countries. Furthermore, as explained in the previous section, after the first oil crisis, the share of raw materials in the production of petrochemical products rose to between 50-75% of their total costs. Therefore, the Japanese petrochemical companies had an incentive to build petrochemical plants in oil producing countries which offered raw materials at low prices.

In fact, in the Basic Agreement of 1971, the Iranians offered the natural gas at only 2 cents per 1000 cubic feet (or 71 cents per 1000 cubic meter, delivered at the wellhead), and naphtha at \$1.8 per barrel. This was at a time when in 1972, the international export prices for natural gas and naphtha were \$10.81 per 1000 m³, and \$20.02 per tonne respectively.¹⁶

Moreover, IJPC was a unique petrochemical company in the sense that it was the only company of its type that could produce industrial salt from its own salt field in huge quantities (500,000 tonne/year) at very low prices for its own requirements (400,000 t/y)

and sell the rest in the Iranian and overseas markets.

The quadrupling of oil prices in 1973-74, however, changed the pricing of raw materials for IJPC in two ways. First, with the rise in petroleum product prices, the price of natural and liquid gas also increased. This development probably caused the Iranians to realise that they could no longer offer the joint venture raw materials at the very low prices agreed in the Basic Agreement. Now they could put the natural gas to other equally profitable uses, like re-injection into the aging oil wells for secondary recovery or export refineries, valuing the natural gas at \$1.60 and \$1.68 per 1000 f³ respectively.¹⁷ These two alternative uses for natural gas could be compared to its value when used for urea production which would fetch NIOC \$1.0-1.20¹⁸ or selling it to IJPC for 2 cents per 1000 f³.

The other factor effecting the pricing of feedstock for IJPC after 1973-74 was the high inflation which followed the rise in oil prices.¹⁹ As discussed in Chapter Seven, high inflation caused the IJPC construction costs to soar from \$358 million to \$2480 million.²⁰ In order to reduce the costs, NIOC agreed to undertake the necessary investment for gathering and transportation of natural gas from the oilfields to the IJPC site. However, this investment, which by 1978 had escalated to \$700 million, forced NIOC to ask for a fair return on its investment and a more realistic price for the supply of natural gas. This new development was totally unacceptable to the Japanese partners who had been attracted to the joint venture on the promise of "free gas". This problem was temporarily settled in 1978 when NPC proposed to supply the joint venture with natural gas at 30 cents BTU, and liquid gas at \$40 per tonne for the first 12 years of the operations.

These prices, compared to international ones, were still very attractive. In 1978,

the export prices for naphtha and natural gas were \$146.14 per tonne and \$76.79 per 1000 m³ respectively.²¹

Lastly, it is likely that the increase in the contribution of raw materials to the total costs of production of petrochemicals which followed the first oil crisis of 1973, caused the Iranians to believe that they now had a stronger bargaining position vis the Japanese partners. In fact the former were complaining that the latter were making all the profits out of the joint venture. With the increase in the importance of raw materials, presumably, the Iranians found an opportunity to make their own profit out of IJPC, or concluded that they had to compensate for the escalation in construction costs by raising the feedstock prices.

As will be argued in the course of the following sections, IJPC was a raw material centred petrochemical company (in my opinion, to the detriment of other factors of production). It was established in Iran, and especially in Bandar Shahpour, to be near the main sources of raw materials. Natural gas was to be supplied from the Ahvaz and Marun oilfields, about 100 km to the north of Bandar Shahpour. Naphtha was to be provided from NIOC's Abadan Refinery less than 100km away, and salt from the sea. This proximity to the sources of raw materials was supposed to reduce total production costs and compensate for higher construction costs in Iran. However, as it was learnt in Chapter Seven, the problem of feedstock and energy supplies and pricing were never resolved between the IJPC partners. In fact, the much higher feedstock prices demanded by the Iranians (as compared to the original prices under the 1971 Agreement) and, the actual unavailability of these feedstocks (due to the fall in oil production after the revolution and the war), together with spiralling construction costs (discussed below) undermined the viability of the joint venture.

The Japanese partners, however, believed that due to the spiralling construction costs, feedstocks still had to be supplied to the joint venture at very low prices, no matter how high the international prices were, in order to make the joint venture profitable. However, once these inputs were no longer available at sufficient quantities and the low prices promised under the Basic Agreement, the Japanese partners lost one of their most important reasons for their involvement in the joint venture. As a result, ICDC advocated a pull-out from the project. Therefore, the high raw material costs and their unavailability was a major factor in the dissolution of the joint venture in 1989.

4.2- The Construction Costs

In this section, the effect of each component of the "location factor" discussed in Section 3.1 on the construction cost of IJPC will be examined. An attempt will be made to establish whether, as the Japanese and others claimed, the construction costs in Iran (or the Middle East in general) were higher than those in industrialised countries, hence making exports from the joint venture uncompetitive in the international markets. To do so, Qatar shall be used as a reference point.

The question of "location factor" will be analyzed from two angles: one related to IJPC's site in Bandar Shahpour, and one from the standpoint of Iran as an oil producing *developing country*. Although, these two perspectives are in fact inseparable, this is done in order to examine the chances of success for the joint venture if the complex had been situated somewhere else in Iran.

4.2.1- The Location of IJPC Complex

The choice for IJPC's petrochemical complex site was Bandar Shahpour, a small

port in the northwest of the Persian Gulf and southwestern Iran. This choice was made by the Iranians who were planning to make the port the centre of the country's petrochemical industry. In fact two other petrochemical plants are also located there. One is Shahpour Petrochemical (the joint venture between Allied Chemical of U.S, which started operations in the 1960s), and the other IRNIP which became operational in 1977.

The reason for choosing Bandar Shahpour was proximity to the Persian Gulf, thus allowing large tonnage ships to berth at the especially developed dock to transport outputs of the complex to foreign markets.²² The other factor in favour of locating the complex there was that Bandar Shahpour was close to major oilfields, hence enabling it to receive its feedstock (gas and naphtha) with the minimum of investment and costs.²³ Moreover, when Mitsui Bussan's team visited Bandar Shahpour in 1969, it considered the site suitable for a petrochemical plant.²⁴

4.2.1.1- The Climate and Infrastructural facilities

Bandar Shahpour (or Bandar Imam Khomeini), is located in an arid area of Iran which has a very hot and humid climate with the temperature reaching 50° C during summer. Moreover, the area's indigenous population is very low. (The population of Bandar Shahpour itself was around 5,000 in the 1970s²⁵). The expansion of the domestic oil industry, which is mostly located in the region, had a small effect on the economic development of the region. Moreover, Bandar Mahshahr, with a population of over 80,000 (late 1970s), is located about 17km to the north east of Shahpour, and accommodates one of Iran's largest oil export terminals.²⁶ (One of IJPC's camps for its employees is located in Bandar Mahshahr).

The infrastructure of Bandar Shahpour was very poor and IJPC had to build almost all facilities, like housing, hospital, roads, docks, electricity, water, etc itself. The company even had to construct a town with the capacity for 20,000 with all amenities to house its staff. All this of course cost money and IJPC had to spend large sums of capital to provide such facilities.

This underdeveloped state of Bandar Shahpour created several problems for the joint venture. Apart from having to spend huge amounts on the infrastructure with the resultant increases in capital expenditure, the initial lack of such facilities delayed or obstructed the construction and smooth progress of the project. For instance, due to inadequate housing, 10,000 Iranian, Japanese, and other construction workers had to share cramped accommodation. This situation caused much friction and ill feelings between Iranian and foreign nationals and created obstacles in the smooth progress of the project.²⁷ Moreover, due to an almost non-existent supply of a skilled or semi-skilled local workforce, almost all manpower requirements of IJPC had to be imported from other parts of Iran and overseas.²⁸ These employees had to be paid high wages (compared to other parts of Iran) in order to entice them to work in such an inhospitable environment.

One can conclude from the above discussion that from a feasibility point of view, all factors, apart from the proximity to sources of raw material were against locating the IJPC complex in Bandar Shahpour. In fact, partly because of the harsh environment, inadequate facilities and the general shortage of skilled manpower prevalent at that time in Iran, IJPC was facing serious problems in recruiting sufficient numbers of personnel to work in the complex after the start of operations. Furthermore, the provision of infrastructural facilities was costing the company huge amounts which it could ill afford.

The last point can be evidenced from the fact that even after the takeover of the company by NPC, the company (now called BIPC) is facing the double problem of deficiency of infrastructure and rising capital costs for provision of such amenities as housing, medical care, etc. In fact, in July 1992, BIPC's Board of Directors was asking its shareholders to allow the company to separate the ever increasing capital investments for infrastructure from direct manufacturing investment because they believed that the former was seriously undermining the profitability and economic viability of the company.²⁹ Moreover, the Board was asking the Iranian government for financial assistance as the latter, for social reasons, had burdened the company with demands for provision of facilities for its workforce.

4.2.1.2- Proximity to the War Zone

One other "location factor", which although unrelated to the factors discussed above, nonetheless, had, to some extent, an effect on the viability of the joint venture. This factor was the proximity of the IJPC complex to the war zone, in southwestern Iran. The Complex site, as discussed in the previous chapter, was attacked more than 42 times by the Iraqis during the eight year war which caused extensive damage to its plants and machinery.³⁰ Moreover, the Iraqis, realising the strategic value of the petrochemical complex to Iran, threatened to attack it if the construction was resumed by the Japanese contractors. As discussed in Chapter Seven, Japanese officials on several occasions asked Iraq not to attack the Complex in exchange for Japan repairing Iraqi installations damaged during the war. This, in fact increased the strategic value of the project and, as soon as Japanese contractors resumed construction, the Iraqi planes attacked the site, forcing the Japanese to abandon the complex. As a result, no construction took place

between 1980-88 (the war years). More importantly, the extensive damages caused by the bombardments and delays due to the war, increased construction costs by at least \$1.5 billion (see Table 7.8).

In the opinion of many experts, including Dr Mostofi, it was the delays in the completion and damage brought about by the constant bombing during the war which seriously undermined the economic viability of the joint venture and led to its dissolution. Having said this, it must be stated that even without damage and delays caused by the war, IJPC was in serious financial and organisational trouble. The fall in oil production and revenues, general disorganisation, economic mis-management, political instability resulting from the revolution of 1979, the hostage crisis, economic sanctions, the eight year war, did serious damage to the Iranian economy and, in particular the oil industry. Due to mis-management, lack of investment and the flee of experienced staff, the oil industry is at present in a treble shape in Iran. Even if the IJPC complex had not been directly been affected by the war (being bombed) it is doubtful whether the Iranians, with the full cooperation of Japanese partners, had the managerial and financial resources to complete the project in time and operate it profitability. There are several evidences to back up this assertion. Firstly, the Mobarakeh Steel Company, a major iron and steel complex, conceived in the late 1970s, during the shah's regime, located near Esfahan. The steel complex, despite being given top priority by both regimes, has not yet been completed after nearly sixteen years of construction. The second case, the construction of Tabriz Petrochemical Complex, although being planned in 1984 and, in spite of all contracts having been awarded, has not yet been started. Thirdly, the case of IJPC Complex itself. Although the war ended in 1988 and the Japanese partners pulled out in 1989 and, contracts were awarded in 1990 to European

engineering companies, the Complex has not yet been completed.

In the two first two cases, the projects were not directly affected by the war, i.e., being bombed. However, all three projects have been severely affected by foreign currency shortages, chaotic economic situation, mis-management, dis-organisation, and political instability. These three cases are only a few examples of many industrial and infrastructural projects which have not yet either started or completed because of the reasons mentioned above.

As would be argued in later sections, even if IJPC had not been affected by the war, and had been completed in mid- 1980s, its chances of profitable operation would have been greatly reduced for the reasons of high construction costs, high feedstock prices, and dis-organisation and mis-management prevalent in the Iranian oil industry.

4.2.2- Delays in the Construction of the Project

As discussed in Section 3.1, one cause of higher capital costs in the developing countries is the delays which occurs in the construction and completion of industrial plants. These delays affect the investment in two ways. First, they prolong the pay-back period, hence reducing profitability or feasibility of the enterprise even before the start of operations. Second, in an inflationary environment, the longer the completion time for a project, the higher the final capital costs.

The economic viability of IJPC was seriously undermined by the delays in the completion of the petrochemical complex. As mentioned in Chapter Seven, the worldwide high inflation that followed the 1973 oil crisis, increased the construction costs of the joint venture by more than six times. Moreover, the implementation of many

infrastructural and industrial projects during the Revised Fifth Plan (1973-78) put severe strains on the already overheated Iranian economy which had reached its absorptive capacity limits (see chapter Four). These high rates of investment not only caused high inflation rates in the 1970s (around 25% p.a), but also brought about a severe shortage of many goods and services and manpower. The high international and domestic inflation rates, plus the shortages mentioned above not only pushed the construction costs of the Complex, but also caused many delays in the completion of the project as the partners had to draw up new plans to reduce such costs (see Chapter Seven).

IJPC suffered not only from delays normally associated with the construction of industrial plants in the Middle East (or other developing regions), but also from delays peculiar to the joint venture itself. These delays, which lasted first from 1971 to 1976, and then 1979 to 1989, seriously undermined the feasibility of IJPC, and were a factor in its eventual dissolution.

Due to the underdeveloped state of the economy and weakness of the local private sector of the developing countries, large industrial projects are usually undertaken by the government. The implementation of these projects is put under the supervision of one or more ministries or government agencies, with their budget provided by the finance ministry or the planning organisation. Therefore, such projects become subject to inefficient, corrupt bureaucracies and the power politics prevalent in these countries. They are also susceptible to becoming sources of personal rivalry between high ranking officials and their respective organisations vying for greater power and influence over the country's top leader. These factors, plus inefficient organisational arrangements, and the generally laid back attitude of natives of such countries towards business matters, are the main causes of delays in the implementation of industrial projects. Almost all these

factors, as observed in Chapter Seven, caused delays in the completion of the IJPC Complex. The most vivid example was the rivalry between the Chairman of NPC and the Minister of Finance who, for personal reasons, was refusing to provide sovereign guarantees for loans from the Japanese banks to IJPC.

However, Iran's underdeveloped economy, or bureaucratic inefficiencies and corruption were not the only sources of delays. The Japanese partners were equally responsible for delays which contributed to the eventual dissolution of IJPC.

As explained in detail in Chapter Seven, the idea of a petrochemical joint venture was first discussed between NPC and Mitsui Bussan in November 1968. Although NPC was very enthusiastic for a swift commencement of the project, it took the Mitsui Group almost three years to finally decide to agree to a petrochemical joint venture. Even then, it was only forced into action because of its aspiration to win the bidding for the Lorestan oilfield. The explanations of the Mitsui Group for these delays were that the petrochemical project was unfeasible and extensive studies needed to be carried out to make it profitable.

After the signing of the Basic Agreement in October 1971, it took another year and half to set up IJPC and the same amount of time to start work on the ground levelling for the complex site. So, it was towards the end of 1973, five years after initial negotiations that preparatory works on the project began.

However, soon after the start of ground levelling works, the joint venture faced its first major problem. The oil crisis of 1973 precipitated high inflation and economic recession in the industrialised countries. These developments changed the economics of the petrochemical industry. Following these developments and the spiralling of construction costs, the Japanese partners brought work on the site to a halt on the

grounds that the project was no longer feasible.

Some partners in ICDC (like Toyo Soda) and a few within Mitsui Bussan itself were arguing that the increased costs and other factors had made the joint venture uneconomic and advocated a pull-out. These disagreements between the Japanese partners, their constant changes to the production policy to suit new market conditions, revisions of construction plans of IJPC, shortage of capital, and the problem that Mitsui Bussan as the managing contractor was creating for the joint venture, delayed the start of actual construction of the complex for nearly three years.

However, as discussed in Section 3.1, although in 1974 construction costs had increased by about 1.76 times, raw materials costs had increased by 6.13 times. This caused the latter's share in total production costs to rise to over 75%. Obviously, this development had enhanced the IJPC chances of success, as it had access to low cost raw materials. Moreover, the rise in the prices of petrochemical products of between 3-4.5 times (200-350%) after 1974, more than compensated for the total production cost increases of 3.6 times over the same period.

From the above analysis, it becomes clear that the rise in construction costs after the first oil crisis did not necessarily undermine the economic viability of IJPC, but was probably enhanced it. In fact, it was the delay in the completion of the project, brought about by the ICDC's hesitations and, problems associated executing large industrial projects in Iran (see Chapter Four) which impeded the completion and viability of IJPC before the Iranian Revolution and the start of the Iran-Iraq war. As Table 8.1 demonstrates, if the project had been completed and become operational by 1974 (as originally hoped by NPC), IJPC would have benefitted from the lower construction costs of pre-first oil crisis and the very high prices for petrochemical products prevalent in

post-oil crisis years.

of course, one must not ignore the fact that even if the Complex had been completed on time, it may have had difficulty in starting operations due to shortage of skilled operators. Even if it had started production, there would have been problems with sales of petrochemical products in the Iranian domestic market (due to the lack of large demand for the outputs of such a large Complex) and the recession in the international petrochemical markets which followed the quadrupling of oil prices in 1973.

Notwithstanding, it was not until September 1976 that the ICDC became really committed to the completion of the project, and it took the Japanese another year (September 1977) to start the actual construction of the complex. Therefore, it took about nine years after the initial talks of 1968 and six years after the signing of the Basic Agreement before the construction of the project began.

The overall effect of these delays was that the construction costs rose from \$358 million in 1971 to over \$2567 in 1978. As a result, the economic viability of the joint venture was seriously undermined and this became a factor in its eventual demise.

From September 1977 until early 1979, the construction of the petrochemical complex progressed at very high speed, which attests the efficiency of Japanese organisation. In fact, by February 1979, the project had been 85% and 65% completed in terms of plant installations and works schedule respectively. However, as learnt in Chapter Seven, in that month, due to the Iranian revolution, construction was brought into a halt, and once again ICDC became hesitant about the viability of the project. But under strong Japanese government pressure, following the second oil crisis and the Soviet invasion of Afghanistan, due to concern about the security of oil supplies, ICDC agreed to the resumption of the construction that had been suspended for nearly 20 months.

Before the construction could be resumed, however, the Iran-Iraq War began in September 1980, and the complex site became the target of Iraqi bombers. This prompted the indefinite suspension of the project which lasted until 1989. The delays and, damage caused by the eight year war, high inflation rates prevalent in Iran during this period due to the effects of the war, had increased the construction costs by at least another \$1.5 billion (see table 7.8). The enormous construction costs, together with other factors, forced the Japanese partners to ask to be released from their obligations under the Basic Agreement of 1971. Therefore, the excessive construction costs became another factor in the liquidation of IJPC.

The Japanese partners of IJPC certainly cannot be blamed for the suspension of the project during the war (as NPC tends to claim), as it was pointless to erect plant and machinery, only for it to be destroyed by Iraqi planes. Understandably, ICDC partners, being private companies; concerned with profits, were not prepared to invest any further in a project whose completion had been delayed by at least 17 years and had no prospects of ever becoming operational.

The expected unprofitability of the IJPC was not the only factor in the Japanese partner's decision to pull out of the joint venture. Other equally important factors, namely a change in the strategy of ICDC particularly Mitsui Bussan, and the failure of IJPC to fulfil its goals were also responsible for the "instability" of the joint venture. These factors will be discussed in later sections.

4.2.3- Insufficient Supply of Indigenous Manpower

Insufficient supply of trained local manpower is a major hinderance to the industrialisation of developing countries. This problem is even worse in oil producing

developing countries with small populations like Saudi Arabia and Kuwait.

Although the petrochemical industry is highly capital intensive and therefore needs just a small workforce for its operations, such countries find it very difficult to satisfy the manpower needs of such plants locally, and have to resort to recruiting large numbers of expatriate workers. This, apart from increasing the labour costs, creates social problems for these countries whose culture and social code of behaviour is very different from those of foreign workers.

IJPC also faced the dilemma of inadequate supply of skilled local manpower and the social problems created by employing a large number of expatriates.³¹ Iran, which had no experience in the construction and operation of a large scale petrochemical complex such as IJPC, had to recruit large numbers of expatriates to complete and run the plant. At the height of its construction, IJPC and its contractors employed around 9,000 workers of whom 3,500 were Iranian, 3,000 Japanese, and the rest from various Asian countries.³²

The main problem for the joint venture was recruiting an adequate number of workers when the plant would become operational. The company needed about 2,000 operators at the time of the start-up of operations. Of these 1,400 were to be Iranians and 600 Japanese.³³ However Iran, with a population of over 32 million (late 1970s) had difficulties in supplying such a relatively small workforce. As mentioned in chapter Four, the PBO had estimated that in the latter part of 1970s (during the Revised Fifth Plan), there would be a shortage of 721,000 of skilled and semi-skilled workers including industrial operators, construction workers, etc. In fact the situation was so critical that in 1978, of 200 Iranian operators (out of the total 1,400) who were needed for the initial phase of the operations only 20 had been secured.³⁴ To alleviate the general shortage

of skilled manpower, the Basic Agreement of 1971 had required the Japanese partners to train sufficient number of workers for the operation of the complex. However, due to spiralling construction costs and lack of adequate finance, the Japanese partners did not run the training programmes for the Iranian personnel as required by the Basic Agreement of 1971. (See Chapter Seven for details).

The problem was not that there was a total lack of skilled manpower in Iran, but rather that after the huge increase in oil revenues, the country had embarked upon an ambitious development programme with many infrastructural and industrial projects being implemented at the same time by both the government and the private sector. The rate of investment in some years between 1974 and 1978 reached the astonishing rate of 60%, a rate which was obviously very high and unsustainable for a developing country like Iran, or even industrialised countries for that matter (see Chapter Four). Under these circumstances, Iran's underdeveloped physical and social infrastructure were put under severe strain, with shortages occurring in many sectors including supply of manpower. These shortages were aggravated by un-coordinated planning and lack of a comprehensive industrial policy. In fact anyone could establish any type of manufacturing operation, without any consideration to the supply of manpower, availability of technology, raw and intermediate materials, capital goods, minimum efficient scale of operation and reap the benefits from a heavily protected domestic market.

The construction of the IJPC complex was probably putting more pressure on the already strained Iranian economy than any other major industrial or infrastructural project. This was because of the sheer size of the project which at the time was to be biggest petrochemical complex in the world. Quite clearly, as shall be discussed in the next chapter, a project of this size was not suitable for conditions prevailing in Iran at

the time, when even the country's most important industrial project (IJPC) had difficulty in securing an adequate supply of trained workforce.

4.2.4- Other Location Factors

In Chapter Four it was explained that the Iranian oil industry, the leading sector of the economy, was dominated by Major oil companies for most of the 20th century. These companies imported most of their plants and machinery required for the operation of the industry from abroad and employed foreign engineering and construction firms for the construction of oil installations. Because of this situation, and the non-existence of any engineering or service companies in Iran, the oil industry failed to establish any backward linkages with the rest of the Iranian economy. As a result, the domestic manufacturing and engineering service industries did not develop sufficiently to meet demand for capital goods and services which was growing very rapidly in the 1960s and 1970s.

However, by the 1970s, Iran had managed to establish a small scale machinery industry which produced (or rather assembled) various heavy, mechanical and electrical machinery for the domestic market. None of the companies active in this field had any technology of their own and produced or assembled such machinery under licence from American, European, and Japanese companies. Although they supplied IJPC with a few pieces of machinery, they were in no position to supply the bulk of sophisticated plant and machinery required by the complex, and these had to be imported mainly from Japan. In fact, as discussed in earlier chapters, one of the main reasons for the interest of Mitsui Bussan in a petrochemical joint venture with Iran was the prospect of exporting huge amounts of plant and machinery required by such a project.

One problem with this method of procurement was that no Iranian engineering or machinery company, or even NPC itself were involved in the design, manufacture or installation of plants and machinery. This severely reduced the opportunities for transfer of technology to Iran, one of the objectives of NPC in seeking a foreign partner. Moreover, it was a condition of Japanese loans to IJPC that all plants and machinery had to be bought from Japan. Japanese companies producing such goods and Mitsui Bussan which was in charge of procurement, used this tied market to sell their products and services at monopoly prices. This situation, as was seen in Chapter Seven, was a source of disagreement between the Japanese partners, Mitsui Bussan and the contractors, and Bussan and NPC. Actually, the new management of NPC which was installed by the Islamic government claimed that Dr Mostofi and the Shah had been bribed by the Japanese partners into agreeing to the "Japanese way" of management so that the latter could make huge profits from sales of plant and machinery to the joint venture.

Moreover, quite a few construction and engineering firms were also established in Iran in the 1970s which could carry out small and standardised industrial projects. But none were able to construct a petrochemical plant with the size and sophistication of IJPC. All such contracts, apart from some construction jobs were awarded to Japanese companies. In fact, the Japanese partners argued that as most of machinery was to be imported from Japan, Japanese engineering firms should be employed to build the various petrochemical units.

As a result of buying plant and machinery from Japan, and employing Japanese engineering firms for the construction of various plants, no transfer of technology to Iran of any significant value took place. There is evidence that the Japanese partners quite deliberately prevented the Iranians from learning anything about the construction of

petrochemical plants (see Chapter Seven).

Finally, the plant and machinery imported from Japan had been mainly developed for use in the conditions and climate prevalent in Japan. In many cases, extensive re-specification of such products were necessary to enable them to operate in the hot and humid climate of southern Iran. Moreover, highly paid Japanese engineers and technicians had to be employed to install such plant and machinery. This obviously increased the costs of such products which in turn increased the total construction costs of the IJPC Complex.

One can therefore conclude that, due to the weakness of Iranian manufacturing and engineering sectors, most of the plants and machinery needed for building the IJPC Complex had to be imported from Japan. Moreover, Japanese companies were exclusively put in charge of the construction of the petrochemical complex. This situation caused a substantial increase in the construction costs and total production costs of petrochemicals produced by IJPC. This obviously reduced the competitiveness of the joint venture in both domestic and foreign markets. In addition, no meaningful transfer of technology, which was one of the aims of the Iranians, took place, and the joint venture, on which the rapid industrialisation of Iran had been planned, failed to establish strong links with other sectors of the Iranian economy.

4.2.4.1- Inappropriate Technology

Apart from high costs, the importation of sophisticated plant and machinery and latest technology from Japan to Iran was bound to create many problems for the joint venture itself and in general for Iran as a whole. There was clearly a lack of correlation between the imported technology from Japan and Iran's existing indigenous factor

endowments. In this regard, Robert Solo explains that the technologies developed in the advanced countries and being transferred to the developing countries, have evolved in, and consequently are adapted to a social and physical environment which differs significantly from that of a developing society.³⁵ He adds that these technologies have been developed in the advanced countries for the benefit of their own endowments, and not for the benefit of those developing countries which are importing such technologies.³⁶

Solo identifies three factors: the capacity to recognise the feasibility of attempting directly to transfer or adapt advanced technology; the capacity to adapt technology to the physical, social and economic context; and the capacity to adopt social and economic conditions to the requisites of technology. In his opinion, these three factors together constitute the capacity to assimilate advanced technologies.³⁷

It is due to the differences in these capacities that countries such as Japan and newly Industrialised Countries, such as Korea and Taiwan have succeeded in assimilating advanced, imported technologies into their own economic, social and, cultural conditions. Moreover, it is because of the lack of such capacities, and more crucially, the failure to expand these capacities that countries such as Iran, despite nearly sixty years of effort have not yet succeeded in becoming industrialised and developed countries.³⁸

In the opinion of the author of this study, the advanced and the very latest technology used for the construction of IJPC Complex was quite incompatible with the social, economic and cultural state of Iran in the 1970s (even today). The Japanese partners had recognised this mis-match, and wanted to build a plant more suitable to Iran's conditions (see Chapter Seven). However, for various reasons (see Chapter Seven) they gave in to the incessant Iranian demands for the latest technology and the

construction of a very large and fully integrated complex. Arguably, the advanced technology, together with the size of the complex, which were totally inappropriate to the conditions prevailing in Iran did pose serious problems in the construction of the project, and apart from causing delays, resulted in cost over-runs. Therefore one can argue that the use of 'inappropriate' technology was a factor in the failure of the joint venture.

5.0- The Effect of Different Modes of Ownership of IJPC Partners on the Joint Venture

The historical backgrounds, modes of ownership, as well the business strategies of the IJPC partners, particularly NPC and Mitsui Bussan, are believed to have been important factors in the establishment, as well as the eventual dissolution of the Iran Japan Petrochemical Company.

In previous chapters, the historical backgrounds, management styles, mode of ownership of NPC and Mitsui Bussan were discussed in great length. It was also explained how the business strategies of these two partners led them into believing that the establishment of a petrochemical joint venture was in the in their mutual interest and would enable them to fulfil their widely different business goals.

This section will examine how the different mode of ownership of the two partners became a factor in the dissolution of IJPC.

The joint venture was a partnership between the National Petrochemical Company of Iran (NPC), and the Iran Chemical Development Company Ltd (ICDC) of Japan on a 50-50 basis. ICDC was in turn composed of Mitsui & Co. (Bussan), Toyo Soda Manufacturing Co., Mitsui Toatsu Chemicals Inc., Mitsui Petrochemical Industries Ltd, and Japan Synthetic Rubber Co. Ltd. So in effect there was only one partner on the Iranian side, but there were five companies representing Japan. One crucial factor which

distinguished the two sides from one another was their modes of ownership.

NPC was established by an Act of Majlis (the Iranian Parliament) in the early 1960s as a vehicle for the development of the domestic petrochemical industry. It is an autonomous subsidiary of the National Iranian Oil Company (NIOC) which in turn is a nationalised company. NPC finances its operations and investments in new petrochemical plants from its own revenues, contributions from NIOC, and most important of all from the national budget. The Plan and Budget Organisation which is in charge of development planning and implementation of various projects supplies the bulk of NPC's budget. Therefore, all expenditure and investments plans of the latter has to be approved by the former. In this way, NPC is under direct control of the Iranian government which sets the policy agenda and the business strategy of the company.

Before the revolution, the Shah, who despite constitutional restrictions had assumed direct control over all aspects of the country's affairs. As was shown in Chapter Four, it was him, who despite advice from the PBO, adopted a "big push" strategy for the industrialisation of Iran in the 1970s. The Shah believed that Iran had a natural advantage in the production of petrochemicals showed keen interest in the development of Iranian petrochemical industry and directly intervened in the activities of NPC. As a matter of fact, it was the Shah who first espoused the idea of the development of an Iranian petrochemical industry and was its strongest supporter. Naturally, he was interested in the petrochemical joint venture with the Japanese, and it is believed it was he who first suggested the linking of the award of the Lorestan oilfield to the company (or companies) which offered the establishment of a petrochemical company as an annex.³⁹

It becomes quite clear from the above that NPC was not an ordinary

petrochemical company, but an arm of the Iranian government. As such, the company was less concerned with profitability or immediate commercial success of its operations, than with the long term development of the Iranian petrochemical industry. To achieve this goal, NPC could ask for and get financial assistance and protection from the Iranian government. In addition, NPC had to consider political and social factors in its decision making and planning.

One negative aspect of this type of ownership was that NPC was subject to cumbersome, inefficient, and corrupt Iranian bureaucracy, and its decisions were affected by power play and personal rivalry of the ruling elite.

In contrast, the five ICDC partners were 100% private commercial companies, and therefore, concerned with short-term as well as long-term performance of their various investments. The shares of these companies were (are) traded on the Tokyo Stock Exchange, and a poor performance by these companies would have adverse effects on their share prices and credit ratings.

Moreover, although a close relationship does exist between the private sector and the government in Japan, and on many matters, especially in the foreign investment field, a high degree of co-operation occurs between the two, the nature of their relationship is very different from those of state companies such as NPC and the government of Iran.

This point was vividly demonstrated throughout the existence of LJPC. One could not distinguish between the actions and policies of NPC and the Iranian government, because they were in effect one and the same. But, on the contrary, in many instances serious friction arose between ICDC and the Japanese government. This was especially so after the start of the Iran-Iraq War, when ICDC, on the grounds of infeasibility of the project (commercial considerations), wanted to pull out of the joint venture, but the

government for strategic reasons, was putting pressure on the company to continue. It should be stressed that the Japanese government, from the very beginning, was a strong supporter of the joint venture, and provided it with low interest loans.

The periodical friction that did appear from time to time between the two was due to their different expectations from the joint venture. The government of Japan considered it as way to establish strong relations with a major oil producing country. ICDC, on the other hand, was concerned with access to cheap raw materials, as well as trading opportunities that such a joint venture would create. When such opportunities, as shall be discussed in the next section, were deemed to be non-existent, ICDC advocated a pull-out, but the government of Japan, for wider political and economic considerations forced or induced the Company to stay on.

A fundamental effect of these different modes of ownership of the parent companies of IJPC was the way that they evaluated the economic viability of the joint venture. ICDC, being a private company, was quite logically concerned with the profitability and competitiveness of IJPC in the international markets, and wanted to make a profit on its investment in the company. As was shown in Section 3.1, it is normal practice of petrochemical companies to require a minimum of 25% return on investment (ROI) when appraising a project. Such companies usually have a few investment opportunities to consider and will usually accept the one which provides them with the best ROI. If a company ignores this criteria, it means that it is not putting its resources to the most profitable use, with the consequence of undermining its overall profitability and an adverse effect on its share prices.

However, as explained above, NPC had completely different objectives in the establishment of the joint venture. The company had been assigned the task of

developing the Iranian petrochemical industry. This implied that it had to use different criteria for appraising a project than those of a chemical company. It was not concerned about the profitability of a project in the short to medium term or return on its investment, but how that project would contribute to the company's goal of expanding the domestic petrochemical industry and transfer of technology.

This attitude of NPC towards the development of the Iranian petrochemical industry was clearly stated by Dr Mostofi. When, after the first oil crisis, the Japanese partners expressed their opinion that the joint venture was no longer feasible, he accused them of shortsightedness and of being concerned with the figures on the balance sheet, while NPC was interested in the development of the Iranian petrochemical industry.⁴⁰

However, what NPC management (both before and after the revolution) were forgetting was that their partners in the joint venture were *private, commercial* companies, not state owned companies like NPC itself. They should have realised that these companies would naturally be concerned with the profitability of their investment, and not with the development of the Iranian petrochemical industry. What was wrong was the unjustified expectation of NPC from its partners to forgo profitability and help it with the expansion of the Iranian petrochemical industry. More fundamentally, NPC had chosen an inappropriate strategy for the development of the domestic industry and its policy of choosing foreign partners to achieve this goal was at fault. (This point will be dealt with in the next chapter).

This section, with the help of some data, will try to illustrate why the different modes of ownership of the two companies (state vs private) made them unsuitable partners for the petrochemical joint venture. In fact, the joint venture might have been very profitable (barring events such as the war) if its parents companies were prepared

to use different criteria for appraising its feasibility than those used by other petrochemical companies, namely, to accept a lower rate of return on their investment.

To clarify this assertion, Qatar's petrochemical industry will be used as a reference point to examine the chances of IJPC becoming a successful company in the international markets. The reason for choosing of Qatar is the lack of data for the Iranian petrochemical industry. Nevertheless, Qatar, which is located on the southern shores of the Persian Gulf, has almost the same climatic conditions and "location factor" as Iran. Therefore, data for that country can be used to examine the standing of Iran's petrochemical industry in an international comparison.

As argued in earlier sections, if oil producing developing countries were prepared to accept a lower rate of return on their investments, their petrochemical industry would be highly competitive in the international markets. This assertion can be verified by a comprehensive study carried out by UNIDO in 1981.⁴¹ Table 8.4 shows the production costs, including 5% ROI, for a typical petrochemical plant in Qatar. Furthermore, in order to determine whether the main products of this plant would be competitive in major foreign markets, shipping costs and tariffs imposed on such products have been added to the total production costs. Then these landed prices have been compared with local costs, including 25% ROI for each product in Japan, Europe, and the United States.

It is quite evident from the Table that exports of LDPE, HDPE, methanol, ethylene, ammonia, SBR, and styrene from the plant in Qatar would be highly competitive with the same products produced by similar plants in Japan, northern and southern Europe, and the U.S.A. The same data can be used to argue that potential exports of some of these products by IJPC which would have had almost the same

production and shipping costs, and would have attracted the same tariff rates as the Qatari plant would have been competitive in these major markets.⁴²

However, there is one major problem with such a conclusion. It has been assumed that IJPC partners were prepared to accept a 5% return on their investment. This might have been the case with NPC if it wholly owned the company. This is because the main goal of the company was the expansion of the Iranian petrochemical industry. Hence it may have been prepared to accept a lower return on its investment in order to make petrochemical products produced in Iran competitive in the international markets and by doing so provide greater opportunities for the fast expansion of the industry.⁴³

However, the same could not be said for the Japanese partners of IJPC. They, being private companies were quite rationally concerned with the performance of their investment and would have required the same rate of return on their investment in Iran as in Japan (25%). And if NPC was expecting its Japanese partners in IJPC to accept a lower rate of return on its investment in the joint venture for the sake of the long term development of the Iranian petrochemical industry (as sometimes NPC management appeared to imply), clearly it had no understanding of how private, commercial companies operated.

One can therefore conclude that the different modes of ownership of the IJPC partners, state versus private, had a significant influence on their expectations from the joint venture. These often opposing expectations (economic development vs profits) did cause some serious friction between the partners and was a factor in the dissolution of the joint venture. The next chapter will discuss why ICDC was not a suitable partner for NPC to form a joint venture with and what strategy the latter should have chosen for the development of the Iranian petrochemical industry.

Table 8.4: Production cost, shipping charges and tariffs influencing competitiveness of petrochemicals from Qatar exported to industrialised country markets landed versus local costs (1980) (US\$/tonne)

Product	PC1	Japan			Northern Europe			Southern Europe			USA		
		SC	T	TC	LC	SC	T	TC	LC	SC	T	TC	LC
Ammonia	151		7	193	375	39	21	211	345	30	11	192	345
DMT	928		--							51	5	207	317
Ethylene benzene	618		--										
Ethylene	290	43	20	353	746	48	21	359	918	36	20	346	918
Ethylene glycol	845		--							62	0	352	612
Ethylene acid	695		--										
HDPE	737	91	91	919	1479	95	104	936	1379	78	102	917	1379
LDPE	638	92	80	810	1367	96	92	826	1295	79	90	807	1295
LLDPE	710	92	88	890	1144	96	100	902	1243	79	99	888	1243
Methanol	111	19	6	136	352	22	17	150	313	17	17	145	313
PET	1875		--	--	--	--	--	--	--	--	--	--	--
Polypropylene	--	92			1283	96			1129	79			1129
Polystyrene	1051	92	160	1330	1474	96	143	1290	1262	79	141	1271	1262
PVC	1343	85	86	1514	1473	88	179	1610	1810	73	177	1593	1310
										120	131	1302	1068

SBR	1671	92	0	1763	2334	96	53	1820	2286	79	52	1802	2286	111	136	1590	1090
Styrene	831		--											120	0	1791	2079
TPA	972																
Urea	134	39	--	--	--	41	--	--	--	33	--	--	--	54	--	--	--
VCM	639		--	--	--		--	--	--		--	--	--		--	--	--

Notes: PC- Production cost at 5% ROI.

SC- Shipping cost.

T- Tariff

TC-Total cost.

LC-Local cost at 25% ROI.

Source: UNIDO (1981), op cit.

6.0- The Effect of the Changes in the Business Strategies of IJPC Partners on the Joint Venture

In Chapter One, it was hypothesised that either a change in the business strategy of partners of a joint venture, or the fulfilment of the goals of the partners by the joint venture cause the latter to become "unstable", i.e. to be dissolved. This section will attempt to establish whether a change in the strategy of ICDC or NPC and/or the fulfilment of the joint venture's goals precipitated the dissolution of IJPC.

6.1- Change in the Strategy of NPC

With regard to various NPC publications and statements made by its management in the mid to late 1980s, one can detect a change in the overall strategy of NPC with respect to the expansion of the Iranian petrochemical industry. Having said this, however, it seems that its policy regarding IJPC remained the same until its dissolution.

With respect to the development of the Iranian petrochemical industry, a change in the strategy of NPC can be observed from the mid-1980s onward. The post-revolutionary management of NPC had inherited the previous regime's policy of the development of an export oriented petrochemical industry with the co-operation of foreign companies. In the light of IJPC's failure, however, it is reasonable to conjecture that the new management reached the conclusion that such policy had led to the underdevelopment of the industry compared to other Middle Eastern oil producing countries.

This was especially worrying as the company had failed to meet even the domestic demand, with the result of ever increasing shortages of petrochemical products. This policy, which had led to the concentration of most of NPC's resources in IJPC, had created a situation in which, by 1989, Iran could produce only 26,000 tonnes of ethylene,

the most basic and crucial petrochemical product.⁴⁴ While at the same time, other oil producing countries had managed to build petrochemical plants with capacities of upwards of 300,000 tonnes of ethylene. (Saudi Arabia had built a total capacity of 2,130,000 tonnes for ethylene production).⁴⁵

It was in the light of the failure of this policy that from the mid-1980s onwards NPC seems to have adopted a new strategy: to build domestic oriented petrochemical complexes near the main centres of consumption,⁴⁶ and *without* foreign partners.⁴⁷

With respect to IJPC itself, it is believed that NPC policy remained unchanged. As discussed in Chapter Seven, NPC made every effort to convince ICDC to remain a partner in the joint venture. It insisted that the units damaged during the war could be easily repaired and that the project could be completed in about three years. It also stressed that the joint venture would be viable and become profitable in the near future. The reason for NPC's efforts to keep ICDC in the joint venture was that it needed Japanese technology, and above all, Japanese capital to complete the project as soon as possible. ICDC, however, was not persuaded by these arguments and refused to invest any further in the project and began to put pressure on NPC to release it from its obligations under the Basic Agreement of 1971.

Therefore, the change in the overall strategy of NPC discussed above, together with wider political and economic considerations led to the Iranians agreeing to the dissolution of IJPC.

As a matter of fact, even in the early years of revolution during which almost 80% of companies owned by Iranians and foreigners were nationalised, IJPC was expressly exempted from nationalisation. The new government gave its full support to the joint venture. They wanted IJPC to be a symbol of cooperation between new Iran and Japan,

a non-Western industrialised country. And as was seen in Chapter Seven, the new regime, throughout the war, tried to keep the Japanese partners in the joint venture.

However, the Iranians, under strong pressure from the Japanese partners, agreed to the dissolution of IJPC in 1989 for two reasons: first, they probably realised that after nearly twenty one years (from the initial negotiations in 1968) of association with the Japanese, they had failed to fulfil their goal of establishing a large and export oriented petrochemical industry. Furthermore, with ICDC's refusal to contribute any further capital to IJPC and its pessimism regarding the future of the joint venture, they came to the conclusion that the complex would never be completed as long as ICDC was a partner.

Second, the Iranian government, sensing the bad reputation IJPC had earned in Japan, and perceiving the general reluctance of the Japanese business and government for further involvement in the project, reached the conclusion that allowing ICDC to pull out of the joint venture was in the best interest of the country. Iran, which after the election of Hashemi Rafsanjani as President, had embarked on a new policy, understood that it needed the co-operation of Japanese business and government to revive the economy which had been shattered during the war. The new government realised that no such co-operation would be forthcoming unless the IJPC issue was settled first. In fact it was President Rafsanjani himself, who, after thirty long meetings, approved the dissolution of the joint venture.

One can therefore conclude that factors such as the change in the strategy of NPC regarding the development of the domestic industry, and the double failure of IJPC to fulfil its goals of establishing a large, export oriented petrochemical industry, and to forge closer ties between Iran and Japan (and actually becoming a source of friction between

the two countries) led to NPC agreeing to the dissolution of the joint venture in 1989.

6.2- Success of IJPC in Fulfilling its Goals and Changes in the Strategy of Mitsui Bussan

6.2.1- Attainment of Goals

Mitsui Bussan, as discussed in earlier chapters, became interested in a petrochemical joint venture with Iran for the following reasons:

- (1)- Access to Iran's oil resources, and in particular to win the bidding for the Lorestan oil.
- (2)- To use cheap raw materials available in Iran to produce petrochemical products at competitive prices.
- (3)- To sell plants, machinery, and some intermediate products on a huge scale to Iran.
- (4)- To obtain the right to sell the products of the world's largest petrochemical plant in the Iranian, Japanese, and international markets.
- (5)- To gain a strong foothold in the fast expanding Iranian economy for other investment opportunities and sales of various products which the company handled (in the 1960s-70s Mitsui Bussan had the smallest share of the Iranian market among the Japanese general trading companies).

Using the terminology developed in Chapter One, Mitsui Bussan hoped to "fulfil" the above "goals" by establishing the joint venture with Iran. In the following, the proposition that after fulfilling these goals IJPC had reached the end of its life and naturally had to be dissolved⁴⁸ and, that the joint venture had become redundant in the new strategy of Bussan will be examined.

- (1)- As discussed in Chapter Seven, one of the main motives behind Mitsui Bussan's involvement in the petrochemical joint venture was its desire to win the bidding

for Lorestan oilfield: the largest remaining oilfield not under the control of major oil companies.

However, after drilling nine dry wells, Mobil Oil, the partner in INEPCO, declared in 1977 that there was no oil in that field and subsequently pulled out of the venture. Following this development, Mitsui Bussan, which had failed to accomplish one of its main goals, considered pulling out of the joint venture. But, it was at a time when after years of postponement, the construction of the project had finally started. A pull-out then would have brought charges of bad faith bargaining and, moreover, would have destroyed the chances of sharing the possible success of IJPC. Also, a pull-out would have strained its relations with Iran, an important oil producing country, with a fast expanding economy and domestic market.

Later on, however, with the collapse of oil prices in 1986, and availability of vast quantities of very cheap crude oil on the spot markets, the security of oil supplies was no longer an issue in Japan (at least temporarily). In fact crude oil available in spot markets was much cheaper than oil supplied on contract basis (Direct Deal or Government to Government). This development made Japanese oil traders concentrate on oil prices rather than security of supplies. One example of this attitude was (or rather is) the fact that the Mitsubishi Corporation, which is a partner in a petrochemical joint venture with Saudi Arabia, has not yet exercised its right to lift the quantity of oil allocated to it under the agreement which established the joint venture. This is because, Mitsubishi can buy the same oil at lower prices on the spot markets.

One can therefore postulate that, with this development, Bussan no longer saw any logic in being involved in a troublesome venture for the sake of securing a stable supply of oil from Iran, when that oil was available from spot markets at lower prices.

(2)- After the steep rise in oil prices, and NIOC's acceptance to invest in the gas gathering and pipelines which supplied natural gas to the complex, the Company demanded higher prices for the raw materials, particularly natural gas which the Iranians had initially promised to supply to the complex at very low prices. Subsequently, ICDC (in which Bussan was the biggest shareholder) lost another of its incentives for further involvement in the joint venture. As learnt earlier, the issue of the pricing of raw materials was never resolved between the two partners and was a factor in ICDC's decision to leave the joint venture.

(3)- It was explained in Chapters One and Five that one of the factors behind the involvement of Japanese general trading companies in foreign investment, especially overseas joint ventures, is the trading opportunities such investments create for sales of plant and machinery to these ventures. And this motive, as argued in Chapter Seven, was a factor behind the Mitsui Bussan enthusiasm for involvement in IJPC.

In fact, by early 1979, Mitsui Bussan had purchased, on a commission basis, almost all plant and machinery necessary for the construction of the project from Japan, and shipped them, mainly aboard its own vessels, to Bandar Shahpour. Therefore, the joint venture had at least fulfilled one of its goals, i.e. providing a major trading opportunity for Bussan to supply all plants and machinery for the construction of the complex.

With the fulfilment of this goal, and the uncertainty which followed the Iranian revolution, Mitsui Bussan lost interest in the joint venture, and advocated a pull-out. However, the Japanese government, for strategic reasons, forced (by the threat of withholding insurance payment) Mitsui Bussan to remain in the joint venture. One factor which attests to this behaviour of Bussan is its suggestion throughout the 1980s that it

should pull out of the joint venture as an investor and complete the project as its contractor. This was because during the war, the complex had been damaged and new plants and machinery were needed to repair it, hence creating new trading opportunities.

(4)- One other factor behind Mitsui Bussan's involvement in the joint venture was the prospects of selling huge quantities of petrochemicals produced by IJPC in Iranian and foreign markets. As discussed in Chapter Seven, Bussan put pressure on NPC to award it the exclusive right to market the outputs of the joint venture in Iran. NPC, for the sake of harmony and despite strong objections from its own trading company agreed to this. Moreover, NPC, at the outset of the establishment of the joint venture, had agreed to Bussan becoming the sole agent for marketing IJPC products in foreign markets as it had no experience in that field. In fact, one of the reasons for seeking a foreign partner was the desire to have access to international markets.

A few developments, however, had made the trading prospects of IJPC rather gloomy. First, because of delays and damage caused by the war, capital costs had increased beyond expectations. This factor plus the higher prices for raw materials demanded by the Iranians would have substantially increased the total production costs, making IJPC products uncompetitive in international markets. This was at a time when due to the two oil crises, the growth rate of demand for petrochemicals had considerably slowed down, and such products had become price sensitive. Even more worrying were developments on the supply side. Throughout the 1980s, oil producing Middle Eastern countries and NICs⁴⁹ like Singapore and Korea had built large, export oriented plants producing petrochemicals at competitive prices. This was especially so in the case of some countries in the Middle East like Saudi Arabia which by providing cheap raw materials and low (even free) interest loans had built formidable competitors for IJPC.

These developments on the demand and supply sides for petrochemicals obviously reduced the chances of success for IJPC in the world markets, and naturally made Mitsui Bussan apprehensive about its future.⁵⁰

Even the chances of profiting from sales of IJPC's products in the Iranian markets had been greatly reduced for Bussan. Although domestic demand for petrochemicals had increased substantially in the 1980s, and most of IJPC output would have been consumed locally, Bussan would have difficulty in making a profit from such sales. First, due to price controls, Bussan would have been forced to sell these products at artificially low prices set by the government.⁵¹ Second, even if the company did make a profit on domestic sales, it would have had difficulty in remitting these proceeds to Japan. This was due to severe hard currency shortages in Iran which had forced the government to put harsh restrictions on foreign currency transactions.⁵²

So one can conclude that due to the above developments, IJPC had failed to fulfil another of its goals and consequently Mitsui Bussan had lost one more incentive to remain in the joint venture.

(5)- One other reason for Mitsui Bussan's interest in the joint venture was the exposure that such an involvement would have given to the Company in the fast growing Iranian market. In fact, Bussan had the smallest share of the Iranian market among Japanese general trading companies, and it was hoping to use the joint venture as a means of gaining a strong foothold in that market.⁵³

Unfortunately, it was not possible to obtain data on Mitsui's trading activities for the 1970s-80s to verify this. But the company, because of its partnership with NPC, a subsidiary of NIOC, was given special preference for the purchase of Iranian oil from time to time (see Chapter Seven for details). Therefore, one can infer that Mitsui

Bussan, because of its involvement in the joint venture, did manage to increase its volume of trading with Iran. However, the extent to which the company managed to achieve this goal is unclear, and hence no concrete conclusion can be drawn.

6.2.2- The Change In the Strategy of Bussan

From available information, it can be conjectured that a change in the strategy of Mitsui Bussan, or at least a re-adjustment of the old one did take place in the mid-1980's.⁵⁴

As discussed in Chapter Seven, the Mitsui Group has historically been weak in heavy industry as it has concentrated on trading, especially trading of standardised goods. This weakness is especially evident when the Group is compared to its nearest rivals like the Mitsubishi and Sumitomo Groups.

Although Mitsui Bussan had been involved in many industrial projects in Japan and other countries, it had mainly assumed the organising, and financing roles usually performed by a Sogo shosha.⁵⁵ But it always avoided direct involvement in the management and running of such ventures. Instead Bussan concentrated on selling goods and services to, and buying the outputs of these companies.

Due to this factor, heavy involvement in the establishment, construction, and management of IJPC was a new role for Mitsui Bussan, and was a big departure from its traditional strategy of emphasising trading over manufacturing. As a matter of fact, when the establishment of the joint venture became definite, Wakasugi, the then President of Bussan, told NPC that his Company had never been involved in and had no knowledge or experience in running such a huge complex, and asked for NPC's co-operation in running the joint venture. NPC knew this fact and that was why it asked for

the involvement of Japanese petrochemical companies in the joint venture.⁵⁶

Moreover, many of the top management of Bussan who regarded the company as a trader, and not a major manufacturer, were from the very beginning against the *direct* involvement of the company in the joint venture. They believed that it was against the tradition of the Company to commit itself directly to the management and operations of such a project, as it was not one of the functions that the Bussan as a trader usually performed. They were not against the involvement of Mitsui Bussan in any joint venture at all, as the Chemicals Department's enthusiasm for participation in the Thailand project in the early 1970s (see Chapter Seven) and Bussan's later interest in other petrochemical projects in China and other countries attest to. But they were specifically against the participation of Bussan in the joint venture with Iran as they believed it would be unprofitable and, moreover, entailed the direct involvement of the Company in the management and operations of the complex, a function normally not performed by a general trading firm such as Mitsui Bussan.

This lack of experience was such that, although Bussan was the biggest shareholder in ICDC, the post of Senior Executive Director, and various other important positions in the Construction Department, the most important post and department in IJPC respectively, were filled by people from other partners of ICDC, i.e. petrochemical companies like Toyo Soda.⁵⁷ Bussan people instead occupied positions in the Marketing and Finance Departments, their areas of speciality.

As explained in detail in Chapter Seven, Bussan concentrated its efforts and energy on organising the procurement of plants and machinery, the area that it was best in, and paid little attention to the management of the joint venture. According to Misato "the primary concern of the Chemicals Machinery Department was to make as much

profit as possible..... and in fact it considered the project just as a 'cash cow to be milked dry'.⁵⁸ He continues that "Bussan's overriding concern in the whole project had been to increase its business; it thought that it could just second a few people to the project and that everything would be muddled through after that".⁵⁹

It is baffling why Mitsui Bussan, an experienced trader in petrochemicals, did not realise that the developments in the petrochemical industry which followed the first oil crisis⁶⁰, had swung the pendulum in favour of IJPC and did not try to take advantage of the situation by trying to complete the project as quickly as possible. In fact, the only concern of Bussan was the total monopolisation of procurement, to the dismay of other ICDC partners and contractors.⁶¹

When everything began to go wrong for IJPC, like delays in the construction, the revolution, the war, shortage of finance, and probably above all the seemingly dire prospects for the completion and success of the joint venture, those managers who had opposed the involvement of Bussan in the joint venture started to reassert their authority. One of their first acts was to oust Ikeda from the presidency of Bussan, as they blamed him for committing the sogo shosha to the ill fated joint venture in the first place and then keeping it there against all odds. They believed that involvement of Bussan in IJPC, apart from wasting huge sums of money, had undermined its standing as a top trader, and damaged its credit-worthiness.⁶²

The new management of Mitsui Bussan adopted a new strategy or rather, reinstated the old one. It emphasised that trading, not manufacturing (especially heavy industry), was Bussan's main line of business. Obviously, IJPC had no place in this new policy and had to be discarded. It was, therefore, as a result of this new strategy that Bussan's new management notified NPC, despite the latter's objections, of its intention

to leave the joint venture. NPC probably realised that Bussan's new management was no longer committed to the joint venture and it was in its own interest to allow the latter to leave so that it could complete the project as soon as possible.

It needs to be stated once again that the new strategy of Mitsui Bussan did not and does not mean that the Company will no longer involve itself in manufacturing or processing industries (like IJPC) in foreign countries. But, as stated earlier, because of the perception of the future unprofitability of IJPC and problems created by the direct involvement of Bussan in the management of that joint venture the new management of Mitsui Bussan re-emphasised its traditional role as a trader and not a manufacturer and decided to pull out of the petrochemical joint venture with Iran. As a matter of fact, Mitsui Bussan is holding discussions with the Chinese over the establishment of a very large petrochemical complex (like IJPC) in that country. Bussan, however will limit its role to organising the procurement of plant and machinery, transfer of technology, purchase of crude oil from the Middle East [perhaps Iran] for the joint venture, and sales of its output in China's domestic market.⁶³ These are the roles usually performed by a sogo shosha. However, there is no evidence that Bussan perhaps as a result of its experience with IJPC, will be involved in the management of the Chinese joint venture.

7.0- Conclusion

In this chapter the factor which are believed to have been responsible for the failure and eventual dissolution of Iran Japan Petrochemical Company were analyzed.

It was argued that such factors as spiralling construction costs, increases in raw material prices, delays in the completion of the project, the size of the complex, the use of inappropriate technology, slow-down in demand for petrochemicals, emergence of new competitors, and to some extent, the effects of the eight year Iran-Iraq War, were

responsible for the failure of the joint venture. Moreover, changes in the strategy of both NPC and Mitsui Bussan, and the failure of the joint venture to fulfil the goals set for it by its parent companies were identified as the factors for the dissolution of the joint venture.

Apart from the above factors, which seriously undermined the success of the joint venture, many of the problems which engulfed the company were precipitated by the different business cultures, historical backgrounds, modes of ownership (private versus state), and strategies of the two main partners, and perhaps above all, the incompatibility of such a large industrial undertaking with the economic, social and political realities of Iran in the 1970s.

It was particularly emphasised that the large size and the fully integrated nature of the petrochemical complex, plus use of advanced technology which were totally incompatible with the realities of the Iranian economy and society were perhaps the root causes of all difficulties which eventually led to the failure of the joint venture (see Chapter Nine).

As it was explained in Chapter Four, after the massive increases in Iran's oil revenues which followed the rise in oil prices of 1973-4, the government embarked upon a "big push" strategy for the rapid industrialisation of Iran. This policy was adopted at a time when the Iranian economy had already reached its absorptive capacities limits and any further investment in fact reduced the total output. When the construction of IJPC Complex started in 1977, the Incremental Capital Output Ratio (ICOR) had already turned negative. It was inevitable that the Iran's largest industrial project (IJPC) would be severely affected by the shortages, such as skilled manpower, goods and services, which had appeared as a result of high investment rates during the mid to late 1970s.

Furthermore, as discussed in Chapter Seven, lack of adequate finance, high construction and raw material costs, shortage of skilled operators, deficient infrastructural facilities, mis-management, arguments between the partners, the state of international petrochemical markets, etc, (see Chapter Seven) had made the outlook for the profitable operations of the Complex very bleak. Arguably, even if the joint venture had not been affected by the revolution of 1979, it is doubtful whether it could have operated profitably for a considerable number of years.

Additionally, the economic dislocation, general dis-organisation, political instability, ideological differences between various government officials, major changes in the management of NIOC and NPC, flight of many experienced staff and engineers and, chaotic situation that followed the 1979 revolution and the war would have prevented the smooth running of the petrochemical complex even if it had been completed on time (1981 as was envisaged under Plan D).

As the present poor state of the Iranian oil industry demonstrates, the joint venture would have indeed encountered many difficulties and, would have suffered from mis-management, lack of coherent organisation, insufficient investment and, many other problems that have beset the industry as a whole. Not only almost all of the NIOC's new projects (refineries, oil exploration and production) are well behind schedule, but the company is not even capable of providing sufficient oil products for the domestic market with the result that chronic shortages of such products occur regularly in Iran. In addition, two of the NIOC's most important subsidiaries: National Iranian Gas Company and NPC are facing similar problems, with many of their projects, despite many years of planning and construction are well behind schedule. ~~The most striking example of these~~ problems is the former IJPC (now called BIPC) itself. Although the joint venture was

dissolved in 1989 and NPC's announced that the project would be given top priority, and after nearly four years of construction, the project is not yet complete. Even if it is completed, the old problems of high construction costs, high raw material prices, and more crucially, inadequate supply of feedstocks have not yet been resolved and will hinder the economic operations of the Complex for many years to come. It is very probable that the Japanese partners were well aware of these problems and hence insisted upon the liquidation of the joint venture.

Finally, the chapter tried to demonstrate that, because of the contrasts in their historical backgrounds, conflicting modes of ownership, business strategies and philosophy, NPC and Mitsui Bussan should never have become partners in a petrochemical joint venture, as their expectations from such an undertaking were vastly different. NPC expected the joint venture to help it develop the Iranian petrochemical industry, and Mitsui Bussan wanted it to help it expand its trading volume and gain access to the Iranian oil reserves. When IJPC failed to fulfil these goals, it was natural that it had to be dissolved.

It may not be very much off the mark to state that considering all the problems faced by the IJPC partners and the joint venture itself to call it a 'joint mis-adventure' rather than a joint venture.

Notes

1. Estrom et al (1979).
2. Pfeffer and Nowak (1976).
3. Indeed, Japan's biggest post-war overseas investment was in the form of the Arabian Oil Company, which was producing oil in the Neutral Zone between Saudi Arabia and Kuwait.
4. Franko (1971).
5. Fayad, M., and Motamen, H., "The Economics of the Petrochemical Industry", Frances Pinter, 1986, pp.40-42.
6. Calculated from Table 8.1: $180,900/50100 = 3.61$
7. "Location factor" reflects the state of the development of the country's infrastructure, its labour productivity and wage rates in the construction sector (mechanical and civil engineering), its technical backup and engineering services.
8. Fayad and Motamen (1986) op cit, p.118.
9. Ibid, p.119.
10. This conflict between private and public interests was very evident in the case of IJPC between ICDC and NPC and will be discussed in detail in later sections.
11. Fayad and Motamen (1986), op cit, p.45.
12. See ibid, pp.45-47 for a more technical treatment of this discussion.
13. Farabi petrochemical was originally established in September 1973 in Bandar Shahpour next to the IJPC complex site as Iran Nippon Petrochemical Company (IRNIP), a joint venture between NPC (50%), Mitsubishi Kasei (24%), and Nissho Iwai Corp (26%), and started operations in March 1977. IRNIP was the largest of Japanese joint ventures with Iran before IJPC was established. Although, the company started up successfully it failed to make profits because of high production costs. The higher costs were due to large capital expenditure to provide infrastructural facilities like housing, roads, waterways, etc. Although the Japanese partners refused to increase the company's capital on the grounds that the return on investment was inadequate, nevertheless they did not pull-out of the venture in the hope that the expanding Iranian economy would provide opportunities for the company to become profitable. The company was eventually nationalised after the revolution, and, as mentioned, is now operating profitably. As IRNIP faced almost the same problems as its neighbour IJPC, we shall discuss it further in Chapter Nine.

14. Interview with an official of NIOC, London, March 1993.
15. Interview with Mr Tetsuo Hamazu, Institute of Developing Economies, London, February 1992.
16. The international export prices for natural gas and naphtha are from the United Nations Industrial Development Organisation (UNIDO), ID/WG.336/3, May 1981, p.84.
17. Fesharaki (1976), op cit, p181.
18. Ibid.
19. It is not being suggested here that the rise in oil prices in 1973-74 was wholly responsible for the worldwide inflation that followed the first oil crisis. It is a well known fact that inflationary pressures had been building up in the industrialised countries from the late 1960s/early 1970s, and was a major reason for demand by oil producing countries for higher oil prices. In fact, the oil crisis of 1974 only intensified the already existing inflationary pressures.
20. The effect of spiralling construction costs on the economic viability of IJPC will be discussed in the next section.
21. UNIDO (1981) op cit, p.84.
22. Interview with Dr Baqer Mostofi, op cit.
23. Ibid.
24. For details of the first visit of the Mitsui Bussan team to study the feasibility of petrochemical production in Iran see Chapter Seven.
25. The data on population is from the "Map of the Islamic Republic of Iran", Map Number 169, Gita Shenassi, 1984.
26. Iran's other major oil terminal is located in Khark Island in the Persian Gulf.
27. For housing conditions and friction between workers from different nationalities see Misato (1981), op cit, Chapter 1.
28. See Chapter Four for the severe shortage of manpower in Iran in the 1970s.
29. Report of the BIPC's Board of Directors to Shareholders, July 1992, p.212.
30. Some Iranian officials believe that Iraqis bombed the IJPC Complex on the request of their ally, Saudi Arabia, which saw the joint venture as a threat to its own petrochemical plans. Interview with an Iranian Official, London, march 1993.

31. For the problems which IJPC faced in recruiting sufficient manpower and the tensions created between local and foreign workers see Misato op cit, chapter 1.

32. "Iranian Petrochemical Project", Special Report, Japan Chemical Week, Vol.119, No.958, August 31, 1978, p.10.

33. Japan Chemical Week, op cit, p.5.

34. Ibid.

35. SOLO, Robert, "The capacity to Assimilate an Advanced Technology", The American Economic Review, Vol.56, No.2, May 1966, pp.91-97.

36. Ibid.

37. Ibid, p.92.

38. For a comprehensive treatment of this subject see KATOZIAN, H., "The Political Economy of Oil Exporting Countries", Peoples Mediteraneens/ Mediterranean Peoples, September 1979, pp.3-22.

39. When at one time, relations between NPC and NIOC had been strained due to personality clashes between their respective top management, the Shah ordered the latter to stop interfering in the affairs of the former and asked the NPC Chairman to report directly to him. (Interview with Dr Mostofi, op cit.)

40. Misato (1981) op cit.

41. United Nations Industrial Development Organisation (UNIDO) held a series of conferences from February to June 1981 in Turkey on the state of the world petrochemical industry and the role of the developing countries in it. This chapter utilises the result of one of its papers on the prospects for the Qatar petrochemical industry in the major petrochemical markets: " Long-term arrangements for the Development of the Petrochemical Industry in the Developing countries including arrangements for Marketing Petrochemicals Produced in the developing Countries", UNIDO, Turkey, ID/WG. 336/2, March 1981.

42. Note that the data in Table 8.4 is for 1981, the same year that IJPC Complex was planned to go on full production had its construction not been interrupted by the revolution and the war.

43. Of course one should not forget that foreign petrochemical companies which operate in an oligopolistic industry would have accused NPC of dumping and unfair trading and would have asked their respective governments for restrictions on imports of petrochemical products from Iran. This was in fact a reason for NPC's desire to have a foreign partner.

44. Nariya, H., "The Present Status and the Future Prospect of Petrochemical Industries", JIME Review, No.11, Winter 1991, p.p.6-7.

45.Ibid.

46.Two of the most important of such projects are the Arak and Tabriz complexes with the capacities of 270,000 tonnes and 150,000 tonnes respectively for ethylene production due to come on stream in the mid-1990s.

47.Of course foreign companies with the conspicuous absence of the Japanese, have supplied most of the plant and machinery and have a major role in building the complexes.

48.In Chapter One it was hypothesised that a joint venture is not to last for ever, but rather to fulfil the goals set for it by its parents. After achieving these goals, the joint venture becomes redundant and consequently is dissolved.

49.Newly Industrialised Countries.

50.A major factor which made IJPC uncompetitive was the very high capital costs incurred in building the complex. These cost were to go even higher because of damage during the war and costs of providing infrastructural facilities. Even BIPC, which took over the complex, admits that these high capital costs have made the project uneconomic.

This is not, however, to say that any petrochemical plant built in Iran would be uncompetitive. Iran has some advantages like the availability of vast quantities of raw materials and a large domestic market which enables her to build a strong and competitive petrochemical industry. The country, however, needs to keep her capital costs under control in order to achieve it.

51.Most price controls have now been eliminated.

52.The restrictions on foreign currency transactions have now been removed to some extent, although the shortage of foreign exchange remain as severe as before.

53.An obstacle facing Mitsui Bussan in the expansion of its trade with Iran was the traditional weakness of the Group in heavy industry. As mentioned in Chapter Four, well over 50% of Iranian imports during the 1960s-70s were capital and intermediate goods. As a result, Bussan did not manage to expand its volume of trading with the country as fast as other sogo shosha's did. For instance, the Mitsubishi Group, which has a wide range of heavy industries within its ranks, has a very large presence in Iran, with Mitsubishi Trading Corporation supplying a large share of the Iranian imports from Japan (mainly capital and intermediate goods). Moreover, at least four other Mitsubishi Group companies have subsidiaries in Iran. But the Mitsui Group is represented in Iran by only Bussan.

54.This section is based on information from Japan Economic Journal, Mitsui newsletters, and various other newspapers and publications.

55. See Chapter Five for an explanation of these roles of the sogo shosha.

56. See Chapter Seven.

57. Adachi; the Senior Executive Director, had been seconded from Toyo Soda.

58. Misato (1981) op cit, p.151.

59. Ibid, p.153.

60. See Section 3.1 of this chapter for the new developments in the petrochemical industry.

61. See Chapter Seven and Misato (1981), chapter 6 for frictions between Bussan, ICDC and contractors regarding the procurement of plants and machinery.

62. As discussed in Chapter Seven, Mitsui Bussan faced serious financial difficulties in the 1980s which resulted from losses sustained by its investment in IJPC. As a consequence, Mitsui's credit ratings were downgraded by major credit rating agencies.

63. Japan Petroleum and Energy Trends, April 1993, p.5.

CHAPTER NINE

LESSONS FOR THE PARTICIPANTS

1.0- Introduction

The aim of this chapter is to determine whether any lessons can be drawn by Japan and Iran from the failure of Iran Japan Petrochemical Company discussed in Chapter Eight.

This chapter discusses how Iran, Japan and their organisations, private or governmental, can avoid repeating such costly mistakes again. And how these two countries can achieve their respective objectives of economic development and stable supply of petroleum.

Furthermore, the chapter attempts to find out if there are any lessons to be learnt by future international joint ventures, especially between private companies of the industrialised world and state owned companies of the developing countries.

2.0- Lessons for Japan

2.1- The Japanese Government

The Japanese government's support for the petrochemical joint venture between Mitsui and NPC stemmed from its concern over the security of oil supplies from the Middle East which has been supplying between 70-80% of the former's oil imports since the 1950s. However, this concern was not shared by all politicians or bureaucrats, even among MITI officials who were responsible for the Japanese oil industry. As a result no official policy as such existed. It was rather a few officials and top businessmen who, being apprehensive about over-reliance on the Major oil companies, mainly American, believed that Japan should have direct access to overseas oil reserves. It was largely as

a result of these people effort's that the Japan Petroleum Exploration Company, the Japan Petroleum Development Corporation (later renamed the Japan National Oil Company which absorbed the former) and the Arabian Oil Company were established.

They argued that Japan should extend her overseas economic co-operation programmes and foreign aid to those countries which possessed large oil reserves in exchange for guarantees of secure oil supplies to Japan.

As observed in Chapter Seven, when Mitsui Bussan became hesitant about establishing a petrochemical joint venture with Iran, it was the leaders of Keidanren who forced the former back to the negotiating table. Moreover, after the first oil crisis when the security of oil supplies became an issue in Japan, the government adopted a "resource diplomacy" which was mainly concerned with oil more than any other raw material.

Immediately after this crisis the government dispatched Deputy Prime Minister Abe and MITI Minister Nakasone to the Middle East with the promise of hundreds of millions of dollars in aid. Moreover, when in 1974 the construction costs of the petrochemical complex spiralled from \$380 million to over \$ 2.8 billion, and the Japanese partners advocated a pull-out, it was the Japanese government which, through the Export-Import Bank supplied large, low interest loans in order to keep the project alive.

At the same time (1974), the Mitsubishi Group stopped its negotiations with Saudi Arabia over a petrochemical joint venture which had been going on since 1970. However, the government, worried about upsetting Saudi Arabia which had by then become the largest supplier of oil to Japan, compelled the Group back into talks over the joint venture and extended great financial assistance through the Overseas Economic Co-operation Fund (OECF) to the venture.¹

Once again, when after the Iranian Revolution and the ensuing second oil crisis, ICDC, on the grounds of increased construction costs and unstable political situation in Iran, advocated a pull-out, it was the Japanese government that due to strategical considerations and security of oil supplies, not only from Iran, but also from the Persian Gulf, persuaded the Company to stay in Iran by providing it with around 80 billion yen in soft loans through the OECF.

It can therefore be concluded that the Japanese government and business leaders believed that by helping Iran and Saudi Arabia with their industrialisation efforts, especially with the expansion of their petrochemical industries, they would be able to secure a stable supply of oil from these two countries.

But in the light of the failure of IJPC (and the success of the Saudi project) are such expectations correct? More precisely, has this type of economic assistance been successful in achieving its aim, or should Japan adopt a new mechanism for helping the development efforts of these countries for the sake of the stability of the region as well as the security of her oil supplies? Moreover, are these types of economic co-operation appropriate for the needs of a country like Iran or should Japan help these countries by other means?

2.1.2- The Impact of IJPC on Mutual Relations

The two Japanese petrochemical joint ventures which were established in the Middle East in the 1970s on hopes of a more stable supply of oil have had different fortunes. IJPC was a total failure but the Mitsubishi Group's venture with Saudi Arabia has been very successful. So, does it follow that, as a result, Japan's relations with and oil supplies from Iran were threatened? Moreover, is it true to postulate that oil supplies

from Saudi Arabia had become even more secure?

The available evidence suggests that at no time did the IJPC issue pose any threats to the diplomatic and trade relations between Iran and Japan or cause disruptions in oil supplies from the former. According to one expert in Iran-Japan relations "Iran's oil export volumes to Japan remained amazingly stable in the 1980s [when IJPC was going through its most turbulent period with the survival of the joint venture in doubt] at lower levels despite violent price changes. This implies that both sides made efforts to maintain trade relations at the cost of price for their own interests' sake."²

In addition, the Iraqi invasion of Kuwait on 2nd August 1990, prompted a mini oil crisis and doubling of oil prices. The Japanese, once again anxious over the security of oil supplies from the Persian Gulf, began to search for sources of supplies to compensate for the loss of Kuwaiti and Iraqi oil. Probably, the only country capable and willing to satisfy Japan's huge demand was Iran, not Saudi Arabia (which had to meet the demands of American and, to a lesser extent, European oil companies). Iran, without regard to the issue of IJPC which had been dissolved only few months before, agreed to supply most of the Japanese extra demands for oil. Of course this was in Iran's self interest as they badly needed the extra revenue. But this also demonstrates that Iran never really believed, as the Japanese used to, in linking the fate of the joint venture to the supply of oil. This point was, as mentioned in Chapter Seven, stressed by Iranian officials in the 1980s who refused to link the progress of the project to the issue of oil supplies.

On the other hand, as previously mentioned, the Mitsubishi Group which is involved in a petrochemical joint venture with the Saudis has so far not exercised its right to lift the oil allotted to it under the agreement which set up the joint venture.

These facts demonstrate that the issue of the security of oil supplies from the Middle East is far more complicated than the Japanese tend to give credit to. They also show that the establishment of petrochemical joint ventures, and their success or failure do not necessarily affect the stability of oil supplies. Having said this, the positive effects that a successful joint venture would have on mutual relations between Japan and an oil producing country like Iran cannot be underestimated.

The security or availability of oil supplies is mainly dependent upon two factors, the United States' economic and strategic policies³ and the economic conditions of the oil producing countries. It is important at this juncture to point out that the term "security" does not only refer to the physical availability and secure supplies of oil (or other commodities for that matter), but also to the *stability* of oil prices as well. As the two oil crises of the 1970s showed, the wild fluctuations in oil prices pose as many, if not more, problems as the physical availability of the oil itself for Japan.⁴

In the light of the above argument, what should Japan do in order to make the supplies of her vital oil imports from the Middle East more stable both in terms of availability and price?

2.1.3- Policy Options for Japan

All the major oil producing Middle Eastern countries are economically underdeveloped. Consequently, as was explained in the case of Iran in Chapter Four, they are heavily dependent on the revenues generated by production and exports of their most valuable asset; oil. These oil revenues enable their governments to implement various social and economic development plans which would be impossible without such incomes.

In fact, in the absence of developed manufacturing and agricultural sectors, the economic viability, social and political stability of these countries are singularly based upon the revenues generated by the oil sector. It is therefore, no surprise that they attach such great importance to their most precious asset which also happens to be in huge demand by the rest of the world and particularly by the industrialised countries. As a result, they tend to use it in various degrees for the furtherance of their national objectives, be they political or economic.

With the failure of industrialised countries to find a reliable and economic substitute for oil and the environmental concerns over the expansion of nuclear energy, oil will remain the most important and economic source of energy in the coming years and decades. What's more, oil supplies from the Persian Gulf region will once again grow in importance as petroleum reserves of other regions like north America and the North Sea are depleted or remain uneconomic to exploit. In addition, with the political instability of the former Soviet Union, and growth of the Chinese economy, oil supplies from these regions will also become uncertain. As a result, Japan will become even more dependent on the Middle East from where she already imports over 70% of her petroleum needs. So what could Japan do to make her vital petroleum supplies from the politically unstable Middle East more secure, both in terms of physical availability and price?

The Japanese government's support for petrochemical joint ventures have obviously been irrelevant in the furtherance of this aim and have had the potential of having the opposite affect by straining relations between her and oil producing countries like Iran.

What Japan should do, in my opinion, is to help these countries develop other

sectors of their economy like agriculture and industry and to assist them in expanding their social and physical infrastructure. If they manage to do this, their reliance on oil exports as the sole means of generating revenue will be reduced, and hence also its relative importance in their national economies. Consequently, the major oil exporting countries will tend not to use petroleum as a bargaining chip in their dealings with the outside world as they will have to consider the effects that a reduction in their oil exports (although unlikely) or sharp price rises will have on other sectors of their economies.

As Iran-Japan relations is the subject of this study, the former will be used as an example here to discuss what Japan could do with regard to her economic co-operation policy towards the Middle East.

2.1.3.1- The Development of Light Industry

As discussed extensively in previous chapters, the main aim of Iran in establishing the petrochemical joint venture with Japan was to develop her petrochemical industry as a basis for her industrialisation efforts and as a means of achieving social and political stability. Iran has many advantages to help her achieve this aim and there are many ways that Japan can help her in this endeavour.

For one, Iran is the most populous (around 60 million) and the most economically developed country of all Persian Gulf oil producers. These two factors are conducive to the establishment of mass produced and labour intensive industries like textiles with efficient scales of operations whose products could be sold in the domestic and foreign markets. Japan, which has the most advanced technology for the production of textile or other mass produced goods, can assist Iran establish such industries by the transfer of appropriate technology to the latter.

2.1.3.2- The Development of Energy Resources and Processing Industries

Iran has huge resources of oil and gas and many other minerals. Japan again, can help Iran to develop these resources and establish industries to process such raw materials into semi-finished or final products for consumption in Iran as well as export to Japan and other countries. This not only reduces Iran's overt dependence on exports of crude oil, but will also help Japan to improve her environment, which is heavily polluted as a result of processing such raw materials at home, as well as to upgrade her industrial structure.⁵

The most specific action that Japan can take concerns the Iranian oil industry. Iran is in dire need of foreign capital and technology to explore and develop new oilfields. If Japan provides the capital and helps Iran to acquire the necessary technology, not only will more oil become available for export to Japan, but it will also release Iran's scarce resources for use in other sectors of her economy.

In addition, if Japan helps Iran to establish export oriented oil refineries, and allows the importation of their output into her domestic market, not only will she aid the latter's industrialisation efforts, but will also increase Iran's stakes in the stable production and exports of petroleum.

Apart from oil, Iran has the second largest natural gas reserves in the world (after Russia). Japan, as the world's largest importer of liquified natural gas (LNG) is in the best position to assist Iran develop this huge and clean source of energy. In fact Japan's co-operation in this regard can be two-fold. First, by the transfer of appropriate technology, Iran will be able to substitute natural gas for oil products as a source of energy in domestic, industrial, and transport sectors, thereby making more oil available for export.⁶ Moreover, gas liquidification is a very capital intensive industry, well beyond

Iran's capabilities, and needs large captive markets on a long-term basis. However, with a very large and growing domestic market for LNG, Japan can assist Iran to establish gas liquidification plants and import their output.

2.1.3.3- The Agricultural Sector

Another area where Japanese assistance can be very beneficial to the Iranian economy is agriculture. Iran enjoys a very varied climate (very cold to very hot) which enables her to produce a wide variety of agricultural products. Moreover, there are vast tracks of arable land in the country only a fraction of which is being cultivated at present. Although the country as a whole is rather arid, nevertheless, there exist large water reserves in some areas of the country which are currently being wasted because of inadequate reservoir capacity, mis-management and outdated water management and utilisation techniques.

Japan is in a very strong position to help Iran expand her agricultural sector. With her long tradition in dam construction she can assist the latter to expand her reservoir capacity. And with the transfer of suitable technology, Iran's valuable water resources can be properly utilised for agricultural production. Furthermore, various Japanese companies with experiences in agribusiness and food processing throughout the world can provide Iran with the latest farming and food preservation techniques.

Also, Japan can transfer technology for the production of agricultural machinery and agrochemicals to Iran so that the latter may develop her industry as well as save on foreign exchange that she spends every year on importation of such products. If Iran succeeds in increasing her agricultural output, not only will she satisfy the fast rising domestic demand, but will also be able to export the surplus to neighbouring countries

or even Japan. This will obviously reduce pressure on the country's foreign exchange from oil receipts which has to be used to the tune of nearly \$4 billion a year for imports of food from abroad.

2.1.3.4- The Infrastructure and ODA

One last area where Japan's co-operation is crucial is the development of Iran's physical and social infrastructure. As seen in earlier chapters, the inadequate supply of local skilled manpower and physical infrastructural facilities posed serious problems for IJPC and caused huge increases in its capital and construction costs and were a factor in the joint venture's eventual dissolution. Japanese assistance in this matter is even more critical than those discussed above. Because without the existence of such vital inputs, any further investment in industrial or agricultural sectors will put even more pressure on Iran's already severely strained infrastructure. Obviously it is counter-productive to invest in the manufacturing sector when there are not sufficient number of indigenous skilled workers, engineers, or managers to run the factories.

Although at present Iran, being an oil rich country does not qualify for Japan's Official Development Assistance (ODA), she does receive Japanese technical assistance. However, with the recent devaluation of the rial (about 20 times compared to the former official rate), she will meet some of the ODA conditions, and Japan should use this opportunity to extend technical aid and provide funds for infrastructural projects.⁷

2.1.3.5- The Form of Japanese Co-operation

In the preceding paragraphs the areas in which Japan can assist Iran to develop her industry and agriculture in order to reduce her reliance on oil revenues as the sole

provider for economic development were discussed. However, the crucial question is what form should this co-operation take, and what methods should be employed for the transfer of financial, technological, and managerial resources to Iran?

It is believed that, as the case of IJPC showed, due to different management styles and the incompatibility of state and private goals, Japanese direct investments, whether wholly owned or as joint ventures, are very inappropriate to achieve this aim. Moreover, with the saga of IJPC still fresh in the memory of Japanese companies and businessmen, it is very unlikely that they will be willing to get involved in Iran's industrialisation efforts in a massive way in the near future.

In my opinion, the best method is to use other forms of foreign investment like licensing and long-term loans so as to enable Iranian companies to receive both the technology and the initial capital for importation of machinery from Japan. The capital can be provided by both government institutions like the Export-Import Bank or private Japanese banks. However, the government of Japan should take due care not to over-extend such loans so as to create repayment problems later on for Iran. Attention should also be paid as to how these funds are used by the Iranian authorities and extension of future loans should be made conditional on satisfactory performance of earlier projects which have received Japanese capital.

Japanese companies can also help Iran by employing the well established develop and import (D & I) method, whereby they provide Iranian companies with technology and capital and, in exchange, agree to buy a certain percentage of their output.

It is important to emphasise that Japan should extend loans to those sectors of the Iranian economy or companies with export potentials. This will clearly not only increase Iran's foreign exchange earnings, but will also enable her to repay these loans. The

capital for oil exploration and production, and petrochemicals are a good start. Later on, such loans can be extended to light and heavy industries, agriculture and so forth.

Finally, funds for the development of Iran's physical and social infrastructure and some agricultural projects can be provided through ODA which is the most appropriate form for such purposes.

2.2-Lessons for Mitsui Bussan

Probably, the biggest mistake of Mitsui Bussan, in my opinion, was to link the establishment of the petrochemical project to acquiring the rights for Lorestan oilfield. If the company really believed that a petrochemical joint venture with Iran would be unfeasible, then it should not have gone ahead with it in the hope of gaining access to Iran's oil reserves to strengthen its oil business. If such a connection did exist, then Mitsui Bussan's management was intending to use profits from the oil business to compensate for losses incurred in the construction and operations of IJPC: i.e. cross-subsidisation or transfer pricing. This practice not only would have wasted the company's resources but also would have resulted in losses to the Japanese government who provided the joint venture with hundreds of millions of yen in low interest loans and in insurance indemnity payments. Moreover, NPC also lost hundreds of millions of dollars as it entrusted the construction of the complex to ICDC when the latter believed that the joint venture would not be profitable.

Moreover, if Bussan thought that the Iranian economy was unable to accommodate a large petrochemical complex, then it should have not given into NPC demands for such a project. Instead, it should have insisted on a medium sized complex as its Chemical Department was suggesting. However, as explained in Chapter Seven,

Bussan was so preoccupied with winning the bidding for Lorestan, that it was prepared to accept any demand that the Iranians were making. Mitsui Bussan, a company with 100 years of history and long experience in international business, should not have heeded the inexperienced NPC's insistence for such a large complex when it knew that it would be very difficult for the Iranian economy to absorb its impact.

Perhaps one other lesson for Mitsui Bussan would be not to form joint ventures with state owned companies of the developing countries. This is because, as discussed in earlier chapters, their objectives for the establishment of such ventures are vastly different from those of Bussan which is a private, commercial company. As in the case of IJPC, Iran wanted to use the joint venture as a means of expanding the petrochemical industry and speeding up the country's industrialisation. On the other hand, Mitsui Bussan was interested in the joint venture to gain access to Iran's oil reserves and expand its trading volume.

In conclusion, lessons that Mitsui Bussan should learn from the failure of IJPC are: first, it should not enter into joint ventures in the hope of acquiring access to a developing country's raw materials. It should evaluate each project on its own merits rather than its desire to win rights to natural resources. Second, it would not be advisable for Bussan to enter into joint ventures with state owned companies of developing countries as their expectations from such ventures are greatly different from those of its own.

3.0- Lessons for Iran

3.1- The Iranian Government

In my opinion, the Iranian government, that is the Shah's regime, made many

mistakes with regard to the expansion of the domestic petrochemical industry. For one, it should not have used the granting of oil exploration and production rights in order to entice foreign companies into establishing petrochemical joint ventures with NPC. Quite clearly, as the case of IJPC showed, companies which enter into such ventures are only interested in winning the bidding for oil rights and have no interest in the joint venture itself. As a result, they do not make a whole-hearted commitment to the success of the joint venture itself. The issues of granting oil exploration and production rights and establishing a joint venture are two quite different issues and should not be mixed. Of course, it is understandable that a developing country which has a few advantages may use whatever inducements it can to attract foreign investment into its manufacturing sector. But this is quite different from making the awarding of access to natural resources to foreign companies conditional on entering into joint ventures with the state owned companies. This way some companies may offer to establish the joint venture so as to win the rights when they have no knowledge of the sector in which the joint venture is to be established.

Another problem was the lack of overall industrial and economic development policies. It has already been discussed in earlier chapters that Iranian governments (both before and after the revolution) have never formulated a cohesive industrial policy. In fact, it can be stated that Iran has never had an industrial policy. Any person or company can establish a manufacturing plant, mainly assembling foreign products, and ask the government for protection against foreign competition. And the government, without any regard to economic viability, minimum scale of operation, availability of skilled manpower and infrastructural facilities, availability of domestic raw and intermediate products, capital goods, local content requirements, export performance, etc, would grant

the new company protection from competition. In this way many companies with a small scale of operations, catering mainly for the then small domestic market were set up from the late 1950s to 1979. As an example, during this period, about ten car and four television assembly plants were established. This was at a time when, due to the smallness of the domestic market, the operation of even one of these companies in each sector would not have been feasible. Of course, thanks to heavy protection, the owners of such companies made huge profits out of the domestic market.

The confusion in the industrial policy, creation of many inefficient companies, and high rate of investment in the manufacturing sector put severe pressure on the underdeveloped Iranian economy. These pressures in turn caused high inflation rates, especially in the mid-to late-1970s, shortages of skilled manpower, and decline of the agricultural sector. The situation was so grave that even LJPC, the most important industrial project, had difficulty in recruiting an adequate number of skilled workers and had to employ expensive foreign workers. Moreover, the lack of industrial policy was denying companies with potential for success (like LJPC) to procure their inputs at reasonable costs, hence putting them at a cost disadvantage against their competitors.

The other problem was (or is) the lack of a comprehensive economic development policy. Although in theory the Plan and Budget Organisation exists to co-ordinate development policy, judged from the present state of the country's infrastructure, it has failed in its task. The PBO implemented six development plans during the Shah's regime and is in the process of executing the first development plan of the Islamic Republic. But so far, it has failed to solve any of the country's problems like shortages of transport facilities (roads, railways, ports, airports), communications, education and training facilities, health, and so on. It has even failed to co-ordinate investment activities within

the government ministries, and between them and the private sector. This has created confusion, strains on existing facilities, and wastage of scarce resources. One specific example of this unco-ordinated planning is the provision of infrastructural facilities for LJPC and IRNIP plants in Bandar Shahpour. The government had undertaken to provide roads, housing, water, and train adequate manpower to meet the demands of these two companies. However, due to disorganisation, the responsible authorities failed to deliver them on time and both companies had to spend their own capital to satisfy their needs. This obviously increased their production costs and, in the case of LJPC, became a factor in the Japanese partners' decision to pull out of the joint venture.

So what does the Iranian government need to do in order not to repeat mistakes like the LJPC and create a conducive environment for the smooth development and industrialisation of the Iranian economy?

3.1.1- Formulation of an Industrial Policy

In my opinion, the most important issue before the Iranian government regarding the economic development of the country is the formulation of an appropriate and cohesive industrial policy. Iran can learn a lot from the Japanese experience in this matter, as the existence of a sophisticated industrial policy is believed by many to be a factor in that country's astonishing success.

The Iranian policy makers must recognise the country's limitations and make a proper assessment of Iran's strengths and weaknesses and develop an industrial policy which builds on the present and potential advantages of the country.

At present, policy options for Iran are rather limited as she only has a few advantages that can be drawn upon in her industrialisation efforts: a relatively large

domestic market, a large and growing population, abundant raw materials (oil, gas, coal, iron and copper ores,...), vast tracks of arable land, a varied climate, and proximity to lucrative markets in the Arabian Peninsula and Central Asia. She needs to devise an industrial policy which promotes the types of industries which use the inputs currently available in the country to produce goods that can be sold at competitive prices in the domestic and neighbouring markets mentioned above. With regard to the above advantages, Iran can only be competitive in light consumer goods industries like textiles, food processing, and resource and energy intensive ones like petrochemicals.

Every developed economy has had a leading sector or industry upon which its industrialisation is based. These industries have included textiles, railroads, automobiles, etc. They have helped the country to industrialise by establishing backward and forward linkages with other sectors of the economy. A case in point is the Japanese textile industry which, after the Meiji Restoration, assumed the role of primer for the later industrialisation of Japan. After the Second World War this role was taken over by the heavy and chemical industries which acted as a conductor for the development of other Japanese industries like automobiles, machinery, etc.

Iran too, if she is to succeed in her industrialisation endeavour, needs to choose a sector of the economy which will act as a locomotive to pull forward other sectors or industries. Considering the present state of the Iranian economy, and potential opportunities open to her in foreign markets, I believe that this role should be played by the agricultural sector. This assertion is made for the following reasons: first, as stated before, Iran has millions of hectares of arable land which, due to the diverse climate can produce a wide variety of agricultural products. Moreover, these products have ready and large markets both within Iran and neighbouring countries. Iran itself imports around \$4

billion worth of agricultural products from abroad. The Arab Gulf states also imported around \$27 billion of food products in 1987 mainly from outside the region. In addition, many of the former Soviet republics are net food importers, with Russia being one of the biggest food importers in the world. Undoubtedly, huge markets exist in these countries for Iranian agricultural products which enjoy a high reputation for good quality and suitability to local tastes. If Iran manages to develop her agricultural sector she will be able to capture a sizable share of these markets which, due to high population growth rates, are expanding very rapidly.

However, producing huge quantities of agricultural products requires massive input of machinery and chemicals, and that is where the role of the sector as the promoter of heavy and chemical industries begins. At present, the most important backward linkage that the agricultural sector can establish is with the domestic petrochemical industry. The sector needs vast quantities of fertilisers, agrichemicals, and irrigation pipes (PVC) which the petrochemical industry produces. Moreover, marketing of food products requires proper packaging whose material is produced by the petrochemical industry. Therefore, the agricultural sector can create a large market for petrochemical products, thus allowing the rapid expansion of the industry.

On the other hand, the farming sector and petrochemical industry can supply cotton and synthetic fibres respectively to the Iranian textile industry which has the potential of producing goods at competitive prices for both domestic and foreign markets.

Of course, the process of industrialisation is not static, and the agricultural sector need not remain the leading sector for ever. **With appropriate planning and a dynamic industrial policy, new sectors which produce higher added value goods can take over the**

role of the leading sector, and in the process help the Iranian economy to grow stronger and more sophisticated.

It is only through such interlinking of various sectors of the economy that Iran can hope to industrialise and increase the living standards of its inhabitants. The history of IJPC shows that Iran cannot just create a large company and pour hundreds of millions of dollars worth of imported plant and machinery and latest technology into it and hope that it will automatically foster the country's industrialisation. Undoubtedly, linkages between various sectors of the economy and the contributions that a new industrial project could to this mechanism must be considered before a new project such as IJPC is undertaken.

3.1.2- Provision of Infrastructural facilities and Formulation of a Regional Policy

As the failure of IJPC showed, lack or inadequacy of infrastructural facilities can pose serious problems for the smooth implementation of industrial projects and hinder the country's industrialisation. A major flaw in Iran's strategy has so far been the lack of co-ordination between various elements of economic development policy, particularly between industrial and regional policies.

More often than not, large industrial projects have been located in underdeveloped areas without prior provision of infrastructural facilities like housing, roads, communications, schools, etc. Companies are persuaded to invest in these areas on the assurance that such provisions will be ready before they commence operations. However, due to unco-ordinated planning, these facilities are not ready in time, and the companies themselves have to construct such provisions out of their own capital. This, as was the case with both IJPC and IRNIP in Bandar Shahpour, resulted in huge cost

over-runs and partly contributed to the failure of the former and unprofitability of the latter.

If Iran is serious about economic development, she needs to formulate a regional, as well as an industrial policy. A thorough survey of the economic potential of various regions of the country which are vastly different in climate, mineral wealth, agricultural productivity, and population, needs to be carried out. Then plans should be drawn to locate industrial plants in such a way that they draw on the strengths of the regions. Before doing so, however, that region's infrastructure should be fully developed so that businesses can be located there without them having to spend their scarce capital on the construction of facilities. In other words, the Iranian government must shoulder the full social cost of development and let companies concentrate on production and expansion of their markets.

3.2-Lessons for NPC

There were critical defects in the strategy of NPC regarding the expansion of the Iranian petrochemical industry. These shortcomings, not only contributed to the failure of IJPC and wasted hundreds of millions of dollars of capital and many years of valuable time, but also caused the serious underdevelopment of the domestic petrochemical industry compared to other Middle Eastern countries. These errors were: seeking foreign partners for the expansion of the petrochemical industry, insistence on creating large scale complexes, and lack of attention to linkages with other sectors of the economy and downstream activities.

3.2.1- Seeking Foreign Partners

The National Petrochemical Company from the very beginning sought the co-operation of foreign partners for the development of the Iranian petrochemical industry. In fact, of nine petrochemical companies that were established before the 1979 revolution, seven were joint ventures (including IJPC) with foreign companies mainly on a 50-50 basis.⁸ Co-operation of foreign companies was essential as NPC had no technology of its own or any experience in operating such high-tech plants.

Up until late the 1960s/early 1970s, major international chemical and some oil companies held patents for most of the technology for the production of petrochemicals. Therefore, new companies like NPC which wanted to enter the industry had to either acquire licences from these firms or enter into joint ventures with them. NPC had to choose the latter option as even if it could obtain the licences, it was unable to run the plants on its own.

From then onwards (late 1960s), however, this situation began to change. Major engineering firms which up to then had been building plants and machinery for chemical companies, started to develop their own technologies for the production of various petrochemical products. Now any company with adequate capital could by-pass the chemical companies and buy petrochemical related technology, plants and machinery directly from the engineering companies.

By the late 1960s, NPC which had accumulated nearly ten years of experience in operating small scale plants changed its strategy from catering for the domestic market to one emphasising the building of export oriented complexes. As it had none of the necessary inputs like adequate capital, experience in running large petrochemical complexes, and access to foreign markets, for the massive development of industry, it

once again had to ask foreign companies for co-operation.

Clearly, the company had not yet gained enough experience to run even small scale plants, let alone large and complex ones. Moreover, it had not managed to satisfy the growing domestic demand for petrochemical products and hence, moving into large scale, export oriented operations was a very big step for the young company.

The involvement of foreign partners in large projects like IJPC was inappropriate because of differences in business strategies between NPC and foreign companies. The former had been given the pivotal responsibility for developing the domestic petrochemical industry, while for foreign firms, any joint venture with Iran would only have been a piece of the jigsaw of their global business strategies. Naturally, any foreign company would not have been concerned with the long-term development of the Iranian industry, but with its own profits and, as a result, would not have paid as much attention as necessary to the joint venture as the basis for Iran's rapid industrialisation.

Even if NPC had to seek the co-operation of foreign companies, it should have been very observant about choosing the right partner or partners. The best partner for NPC would have been international chemical or oil companies with years of experience in running petrochemical plants. For various reasons, European or American oil and chemical companies were not interested in a large petrochemical joint venture with Iran, and the only suitable candidates left were Japanese companies. So in late 1969 NPC began discussions with Mitsui Bussan over the possibility of establishing a joint venture. Although NPC states that extensive studies were carried out to find the most appropriate partner, if the history of IJPC is anything to go by, it certainly made a bad job of it. If NPC had made a thorough study of the functions and historical development of Japanese trading companies, especially those of Mitsui Bussan, it would have realised that the

latter had neither the interest nor the managerial, technical, and organisational ability to run a large petrochemical complex. Instead, NPC should have involved a major Japanese petrochemical company as its main partner in the joint venture. Then, if required, as is customary in Japanese foreign investment, bring in a *sogo shosha* as a minor partner to play the organising role and assume responsibility for marketing of the joint venture's products in international markets. In this way, NPC would have benefitted from the experience of a large chemical company for the construction and running of the complex, and from the global network of a general trading company for sales of petrochemicals.

However, I believe that the best strategy for NPC would have been to develop the domestic industry on its own and only use foreign companies to build the complex on a turnkey basis and acquire the necessary licences from. This way, NPC would not have wasted valuable time in prolonged negotiations with foreign companies over the establishment of a joint venture and would have been ready to take advantage of new developments in the international petrochemical industry after the first oil crisis.

3.2.2- Size of the Plant and Downstream Linkages

One other flaw in the NPC strategy was insistence on establishing a large, integrated petrochemical complex. The adoption of such policy was erroneous as NPC had difficulty in providing infrastructural facilities and skilled workers for the running of even small scale plants.

The feasibility studies carried out by the Chemical Department of Mitsui Bussan showed that the Iranian economy was only capable of absorbing the outputs of a 100,000 tonne ethylene plant. But NPC, setting its sights on capturing a share of the huge

international market for petrochemicals, insisted on a 300,000 tonne plant. Evidently, the company was ignoring its own limitations and difficulties it was having in managing the small plants already built with foreign companies. Presumably, NPC was expecting that a major foreign partner such as Mitsui Bussan would solve all obstacles associated with building and operating a large integrated complex like IJPC.

NPC's insistence on a large complex looks even more improper when one considers that from the early 1970s onwards production costs of petrochemicals were becoming less and less sensitive to capital costs. But at the same time, the share of raw materials in total production costs were gradually rising until 1974 when, due to the first oil crisis, it jumped to nearly 75% of total costs. (See Chapter Eight)

In addition, NPC was ignoring the effects that a large scale complex would have on the underdeveloped state of the Iranian economy: inadequate infrastructure, shortage of skilled manpower and, especially, lack of indigenous downstream facilities to process the output into final and consumer products. Moreover, a large, integrated petrochemical complex such as the one proposed by NPC, did not even exist in the Western industrialised countries or even Japan itself. In fact, the IJPC complex was the first truly integrated petrochemical plant in the world. It is baffling how the NPC management was expecting such a mammoth project to succeed against all odds: namely its own inexperience, and underdeveloped domestic economy, and the monopolistic structure of the international petrochemical industry.

3.2.3- The Alternative Strategy

If, instead of establishing a large, fully integrated complex such as IJPC with the co-operation of foreign partners, NPC had concentrated on the gradual expansion of the

industry, surely the Iranian petrochemical industry would have been in a very different position now.

The pouring of most of NPC's resources and indeed those of the Iranian government's, into a single large project caused the severe underdevelopment of the Iranian petrochemical industry. The situation was so critical that by 1989, Iran's capacity for ethylene production, the most basic petrochemical product, was only 26,000 tonnes per year, or a mere 0.007% of the total Middle Eastern capacity of 3,755,000 tonnes per annum.

If NPC had gradually expanded the domestic petrochemical industry by building medium sized plants, say 150,000 t/y on a turnkey basis, without foreign partners, and in tandem with its own organisational development and experience, the growth of the Iranian economy and downstream industries, Iran would now be enjoying the fruits of a well developed and sophisticated petrochemical industry.

If NPC had chosen this strategy in 1968, the year that it opened discussions with Mitsui Bussan, it would have been able to complete, for instance, a 150,000 t/y plant before 1973, enjoy the benefits of lower construction costs prevalent in pre-first oil crisis years and sell its products at the highly inflated prices of post-crisis years. Moreover, as NPC gained more experience and received dividends from the existing plant, it could build larger and more sophisticated complexes and eventually become a major force in the international petrochemical markets.

The original NPC strategy seem to have been discarded by the new management which took over after the 1979 Revolution as it has begun to construct medium to large sized plants near main centres of consumption away from the Iraqi border such as Arak and Tabriz in central and northwestern Iran respectively. At present, NPC has seven new

petrochemical plants (including the above two), from small to large scale, under construction which will come on stream by the mid-1990s. These are in addition to the planned completion of the former IJPC complex (now BIPC) by 1994 and expansion of the existing eight plants. These petrochemical complexes have been designed to cater for the domestic market but with the ability to expand production to enter the foreign markets in the near future.

3.2.4- The Organisation of NPC

NPC is a state owned company. More precisely, it is an autonomous subsidiary of NIOC which is a nationalised company. These two plus a few other oil and gas companies, which are subsidiaries of NIOC, are under the control of the Iranian Ministry of Oil with the Minister acting as the Chairman and Managing Director of NIOC. In this manner all these companies are under the firm control of the government which determines their business strategy and is heavily involved in their affairs. As more than 90% of the government's annual revenue and foreign exchange is provided by the sale of crude oil, the Ministry and NIOC occupy a central position within the Iranian government. In fact the new revolutionary government was so concerned with control over the oil industry that it proposed abolishing the NIOC and putting all its activities under the newly created Ministry of Oil. However, due to strong objections from the Company these proposals were not carried out. But nevertheless, all activities of the oil industry were put under the firm control of the Ministry. In this way NIOC and its subsidiaries are mere departments of the government with a heavy bureaucratic character. In fact, they are very different from European state owned oil companies like ENI of Italy or CFP of France.

The latter are independent companies whose shares are owned by their respective governments⁹ which determines their strategies. But the management of these companies are given considerable leeway in the running of their firms and implementing of government policy.

But the situation is quite different with NIOC and its subsidiaries. There the management are and act more like bureaucrats than businessmen or managers. They are given no freedom to determine the strategies of their respective companies. What's more, they do not have even the freedom to execute the policies that are set for them by the government. In fact they perform their duties within a very tight regulatory framework set by the state, and are not allowed to take decisions on their own. Obviously, if Iran intends to develop economically and socially, it needs to modernise its institutional arrangements, particularly those of its state owned companies which control a very substantial part of Iran's productive assets.

These organisational arrangements and heavy governmental interference in the management of state owned companies have prevented the latter growing both organisationally and economically and they are unable to compete with their respective foreign competitors both in the domestic and international markets. This state of affairs has created many inefficient and structurally weak companies which are increasingly dependent upon heavy government protection and subsidies. The following section will discuss how NPC should re-arrange its organisation so as to avoid repeating of misfortunes like IJPC.

3.2.5- Organisational Options for NPC

At present NPC owns all the twenty companies active in the Iranian

petrochemical industry. Sixteen of these are small to large petrochemical complexes, some of which are operational and some under construction. The remaining four are trading, engineering and consulting firms. These companies although nominally independent, are under the strict control of NPC and in reality are its branch offices. Their management have no say in the running of the companies and only execute the orders of their parent company.

However, under new government policy, the private sector and foreign companies will be allowed to own and operate petrochemical plants. At present around eight projects are proposed by private Iranian and foreign interests, one of which is under active consideration. Furthermore, as a part of the re-organisation of the Iranian oil industry, NIOC and its subsidiaries, including NPC, may be required to sell a few of the companies under their control to the private sector or other state owned companies.¹⁰ Under these circumstances, NPC must seek a new role for itself within the emerging domestic petrochemical industry. But, what role can NPC play in the new environment? I believe that the Company has two distinct routes for re-organisation to choose from. NPC can either become an independent but state owned petrochemical company, or it can become a governmental agency with responsibility for the regulation of the domestic industry without owning any productive assets of its own.

3.2.5.1- An Independent, State Owned Company Option

The first option requires the company to become totally independent from the government and be run like a commercial company. The state, as at present, would wholly own the company, appoint its board of directors, and set its long-term strategy. However, government involvement would end there and NPC would be allowed to run

like a commercial concern. The top management would be in charge of the Company without any interference from the government or the ministry responsible for it. Moreover, NPC's budget should be taken out of the government's annual or development budgets with the management being allowed to raise capital from domestic and foreign sources within a pre-determined framework. In addition, the management should have full authority to enter into contracts or joint ventures with other companies, Iranian or foreign, without the need to receive approval from the Council of Ministers or the Parliament. NPC should also be given total freedom to decide its recruitment and compensations policy without any pressure from the state and not be subjected to the rules set for civil servants as is the practice now. Of course, the company would be required to observe the government's industrial relations laws and minimum wage guidance. The top management's performance should be evaluated by its ability or success in implementing the overall strategy agreed with the government. The top management should be appointed on the merits of their proven managerial abilities and business acumen and not on the basis of their political connections as has been the case since the establishment of NPC.

Finally, all of the NPC subsidiaries should become autonomous companies with their management being given full responsibility for the running of their firms. NPC would set a strategy and framework within which these enterprises would be given total freedom to operate. Moreover, they should be given greater freedom in their sales policies, raising of capital from domestic and foreign sources, and their recruitment and compensation policies.

3.2.5.2- A Regulatory Authority Option

At present NPC has the dual role of a regulatory body responsible for the development of the Iranian petrochemical industry and the owner of subsidiaries which are producing petrochemical products. This state of affairs is incompatible with the government's plans to invite private domestic and foreign capital to invest in the Iranian petrochemical industry. NPC needs to give up one or other of its roles. Obviously, private capital is apprehensive about investing in an industry in which one company will be both its regulator and competitor. This is even more problematic when one realises that the regulating and competing firm is owned by NIOC, the company which will be supplying most of the raw materials needed by the private companies. This will raise the question of giving unfair advantages to the state owned company which will be the biggest competitor for the private companies. If the Iranian government intends to bring private capital, in a massive and meaningful way, into the domestic petrochemical industry, it will need to take away one of the dual functions of NPC.

In this option, NPC will be modelled on the lines of the Japan National Oil Corporation. NPC will be required to dispose of all its subsidiaries which are producing various petrochemicals and become a government agency in charge of regulating and facilitating the expansion of the Iranian petrochemical industry. The new NPC will set an overall strategy for the development of the industry and the regulations for the participation of private capital in it. Moreover, it would be able to co-ordinate investment activity within the industry by having the authority to issue licences, and allocate production capacity on a pre-determined basis to prospective candidates. The new company would also be given adequate funds so that it could offer low-interest, long-term capital to qualifying companies for investment in productive assets. Finally the

new company would, through various incentives and regulations, encourage vast participation of private interests and greater competition within the industry.

This last option is far more radical than the Iranian authorities or even NPC management may be willing to accept. But, as the history of IJPC showed, private and state goals and interests are incompatible, and partnerships between bureaucratic state owned companies and private commercial ones are more likely to fail than those between firms in the private sector. Therefore, if they are truly concerned with the development of the industry and the general industrialisation of Iran, they should adopt measures to create a more dynamic and competitive petrochemical industry which is more willing to accommodate private capital and fresh ideas than the present bureaucratic and inefficient NPC.

4.0- Lessons for Joint Ventures

This section will examine the lessons that can be drawn by international joint ventures, especially those between companies from industrialised countries and the developing world, from the IJPC experience. However, it is important to point out that IJPC was not a typical joint venture in the sense that, throughout its life, it remained in the construction stage and never became operational. Therefore, one can only make recommendations related to the initial stages of the formation of a joint venture, i.e. finding suitable partners, preliminary negotiations, and for the drawing up of a business plan and the joint venture agreement.

4.1- Finding a Suitable Partner(s)

A joint venture between two enterprises can be likened to a marriage between

two human beings. The more the prospective marriage partners know about each other's background, up- bringing, current status, and future plans, the more likely it is that they make a sounder decision about the suitability of the other person as a marriage partner. Moreover, the more the prospective partners know about and share one another's future plans and goals in life, the more stable and fruitful their marriage will be.

The same reasoning applies equally to two companies which are considering establishing a joint venture. Obviously, the more the two companies know about each other's historical background, business philosophy, line of business, strengths and weaknesses, organisational set-up and managerial style, the better their evaluation of the other as a suitable partner in the joint venture. More importantly, if the two firms have a similar business strategy, the more likely the chances of success and survival of the joint venture.

In order to illustrate how two firms, one a state owned company from a developing country and the other a private one from the industrialised world, can search for and find a prospective partner for a joint venture, NPC and Mitsui Bussan will be used as examples.

4.1.1- The State Owned Company's search for a Partner

Let us first take the point of view of a state owned company from a developing country (like NPC) which plans to establish a manufacturing or processing plant in a certain industry and needs a foreign partner to provide it with capital, technology and access to overseas markets. If no apparent partner is available, then the company should advertise its business plan in appropriate journals or through other mediums and ask interested firms to send their own business plans and biddings for the proposed venture.

Although, after further negotiations these business plans and biddings may change, at least they show which of these companies have plans nearest to its own and have the best proposals for their participation in the joint venture.

Next, those companies with the most promising plans and proposals can be asked to demonstrate what qualifications they have for participation in the proposed joint venture and what contributions they can make to fulfilling the goals of the state owned company and the proposed venture. By this process, the companies with ulterior motives (those that want to use the proposed joint venture as a vehicle for the advancement of their other commercial interests: like access to the developing country's natural resources) can be identified and eliminated. Then, a short list of the most suitable partners can be drawn up.

The next stage would be to learn as much as possible about the historical background, business philosophy, past performance, future plans, and most critically of all, the credibility of those companies on the short list.

The state owned company may not have the personnel or resources to carry out such a demanding task on its own. But because of its connection with the state (which presumably is backing the company's plans) it can utilise government resources like diplomatic channels, the intelligence service, other state owned companies and banks with overseas branches, to carry out a detailed search on the firms under study.

By sending its own personnel or through the above mentioned channels, the state owned company can contact banks, customers, competitors and other industrial and academic sources to gain first hand knowledge about the companies under study. If the prospective partners have joint ventures in other parts of the world, their partners should be contacted to learn about their experiences in dealing with these companies. These

comprehensive studies will help build a profile of companies under investigation which will enable the state owned company to gain a real understanding of the strengths and weaknesses of each company and discover potential pitfalls that may arise in the future. Then it can isolate the company (or companies) which has the business plan nearest to its own and would make the best partner in the proposed joint venture. It is only then that direct discussions over the proposed venture should start with the targeted company.

NPC states in its publications that an extensive search for potential partners for a petrochemical joint venture were carried out in the late 1960s. As a result, Japanese companies, especially Mitsui Bussan, was deemed to make the most suitable partner. But, if the saga of IJPC is anything to go by, it becomes obvious that this search was not extensive enough.

If NPC had carried out the exhaustive research suggested above on the operations and functions of Japanese trading companies, it would have realised that the latter were not the most suitable partners for a petrochemical joint venture. More specifically, if NPC had researched the historical development of the Mitsui Group, and Mitsui Bussan in particular, it would have realised that the Group as a whole had a historical weakness in heavy industry, making it unable to manage a huge petrochemical complex (as the President of Mitsui Bussan admitted after the establishment of the joint venture). Also, NPC would have learned that a sogo shosha's main line of business is trading, not manufacturing, and that their real motives behind extensive foreign investments are the trading opportunities (exports of plants and machinery and purchase of the outputs) that such investments create, not the profitability of the investment itself.

Moreover, if NPC had studied joint ventures that Mitsui Bussan had entered into around the world and had contacted their local partner, it would have realised that,

irrespective of the size of Bussan's (or any other sogo shosha) equity, it exercise effective control over the operations of the joint venture, leaving little room for local participation.

Having considered the above discussion and many other problems which LJPC faced, one can safely assume that despite NPC's statements, the company never really searched for a suitable partner and entered into the joint venture with the first company that showed the slightest interest in the idea. The best choice, as suggested earlier, would have been a major Japanese petrochemical company as the main foreign partner in charge of the construction and operation of the complex, and a Japanese general trading company, such as Mitsui Bussan, responsible for selling the joint venture's products in overseas markets through its extensive international network.

4.1.2- The Private Company's Search For a Partner

The criteria by which a commercial company from an industrialised country (such as Mitsui Bussan) chooses a partner from a developing country are not necessarily the same as those discussed above. Apart from seeking a partner which will help it expand its business in the local and regional markets and one whose business plan and strategy is similar to those of its own, it needs to investigate some other aspects as well.

Multinational companies, with their worldwide networks and business connections do not face the same obstacles as companies from the developing world, in carrying out an extensive study on the suitability of potential partners in the developing world. This is especially true in the case of Japanese general trading companies whose information gathering capabilities rival those of intelligence agencies of the Western world. Therefore, the speed with which they can conduct these searches enables them to identify potential partners from developing countries much quicker than the other way round.

Moreover, the quality of the information they gather allows them to make a sound judgement of the strengths, weaknesses, and contributions that the targeted company can make to the proposed joint venture.

The most important factors that the private company must consider are the degree of independence that the state owned company enjoys from government interference, the calibre of its management, and its financial capability. The first factor is of great importance. If the company is run more like a government department, rather than as an independent enterprise, then it is very likely that its management will act more like bureaucrats, with all its implications, rather than businessmen. Furthermore, this will mean that all decisions of the partner and the proposed joint venture will be subject to the approval by government and possibly the national parliament. This will also mean interference by often corrupt and inefficient bureaucrats in every aspect of the decision making.

Financial strength and the degree of financial independence of the state owned company are also crucial factors. If the company has to seek the approval of the government for every investment plan, then obviously such plans will be subject to delays to get permission from the relative authorities. In addition, personal rivalries between the top management of the state company and some high ranking officials and politicians may further impede the rapid approval of loans or financial guarantees needed for the implementation of investment plans. This point was vividly demonstrated in the case of IJPC when the then Finance Minister for personal reasons, refused to provide the financial guarantees needed for receiving loans from Japan, and by doing so delayed the start of construction by at least a year.

If Mitsui Bussan had carried out a thorough search on the background and

organisation of NPC, it would have realised that the latter was more like a government department than an independent business enterprise, heavily dependent on the state for its financial resources. It would also have discovered that every decision of NPC was subject to the approval of the Iranian government, Parliament and, above all, the Shah, implying heavy bureaucratic interference and control in the affairs of NPC and consequently the joint venture. Having understood the implications of the bureaucratic nature of NPC, Mitsui Bussan may never have entered into a joint venture with the latter, or would have asked for assurances that such interference would be kept to a minimum.

Having identified the most suitable partner, the state owned company and the private firm need to discuss in detail their expectations from the joint venture and the contribution that each can make towards fulfilling their respective business goals. In order to so, the prospective partners need to draw up a business plan for the proposed joint venture which, apart from bringing together the expectations of the partners, will spell out the business strategy of the venture.

4.2- The Business Plan and the Joint Venture Agreement¹¹

It is important at this juncture to state that the business plan of the proposed joint venture must be drawn up and agreed upon *before* the legal agreement establishing the company is signed. This is because, as the case of LJPC showed, the partners will bind themselves into a legal framework which they will find very difficult to amend should it become necessary to make changes to the joint venture.

In negotiating the business plan, the partners should involve their managerial,

technical, and financial personnel to discuss such matters as business strategy, management style, product mix, production plans, financial policy, etc. It is unnecessary, even wrong, to discuss the legal matters related to the joint venture at this stage, as the business plan should not be viewed as a legal document, but rather as a discussion paper between the personnel who will be involved in the running of the venture. The aim of these discussions over the business plan is to crystallize the expectations of the prospective partners from the joint venture at an early stage so that any mismatches between those expectations can be identified and, if possible, reconciled.

The detailed negotiations over the business plan may also help expose any ulterior motives, if any, of the potential partners so that the other side can take appropriate measures before signing of the legal agreement. When all matters regarding strategy, management style, production policy, and finance have been sorted out, the final draft of the business plan can be drawn up and forwarded to the top management of the companies concerned.

The final draft of the business plan, and the joint venture agreement, however, must contain several essential elements including: rules for the dissolution of the joint venture, rules for making changes in the production policy and business plan itself, and contingency plans.

Earlier on in this section it was stated that a business joint venture is like a marriage between two people. However, in Chapter One it was hypothesised that a joint venture is not made to last but rather, after fulfilling the goals of its parents, it will eventually be dissolved. And this is the crucial difference between a joint venture and marriage. Consequently, as the eventual dissolution of the venture is foreseen or expected, the business plan and the joint venture agreement must contain provisions to

deal with that eventuality. They must specify under what conditions, and how, the joint venture is to be dissolved. For instance, partners may want to stipulate that if the joint venture does not begin operations or achieve a certain production target or profit rate after a specified number of years, one of the partners will have the option of buying out the shares of the other party or seeking another partner. The agreement must also state at what value, book value or certain multiplier of earnings, the equities of the other partner should be bought.

The business plan and the agreement must also recognise that the fast changing and dynamic business environment will inevitably affect the joint venture. Thus they need to contain provisions which would allow for the regular revision of the strategy, management style, and production policy of the joint venture.

Finally, the business plan and the joint venture agreement must contain contingency plans to deal with unforeseen situations or events on a predetermined basis. These situations include war or revolution in the country where the joint venture is based, or a fundamental change in the policy of the host government or the local partner. It could also include a situation where the parent company of the foreign partner is taken over by another company which the local partner does not deem to be a suitable partner.

4.3- The Experience of IJPC

Unfortunately, the IJPC partners not only did not try to learn about one another before going into partnership, but also signed the Basic Agreement before drawing up a comprehensive business plan. In fact, NPC and Mitsui Bussan, using Misato's¹² phrase "put the cart before the horse". They committed themselves to a legal straight jacket even

before substantive negotiations over the joint venture's business plan had started. This created several problems for the joint venture as well as the partners themselves.

First, after hurriedly signing the Agreement in order to win the bidding for Lorestan oil, Mitsui Bussan found itself involved in a joint venture which did not have the whole-hearted support of the entire Company. Specifically, when INEPCO failed to find any oil in Lorestan, Mitsui Bussan, whose interest in the petrochemical company venture had stemmed from its desire to increase its oil business, found itself unable to leave the joint venture. Moreover, NPC had entered into a venture with a reluctant partner who used every opportunity to delay the start of the construction.

Second, the partners found themselves arguing over the business plan for at least four years after the signing of the Basic Agreement. This not only caused a long delay in the start of construction, but also created an unfriendly environment because of protracted and often hostile discussions over the production policy, style of management, and appointment of managing contractor. They also used the lack of a final business plan as an excuse to make at least four major alterations to the production policy. Furthermore, the Japanese banks and the Plan and Budget Organisation of Iran refused to extend large loans to the joint venture on the ground that no finalised business plan existed. Consequently, as a result of the lack of a business plan, the start of the construction of the petrochemical complex was delayed by about six years after the signing of the Basic Agreement.

Third, as a result of lack of separation clauses and contingency plans, the IJPC partners found themselves trapped in a joint venture whose construction had lasted nearly seventeen years without ever becoming operational. If such provisions had been included in the Basic Agreement, Mitsui Bussan, for example, could have invoked them

after the Iranian Revolution or the Iran-Iraq war, arguing that due to changed circumstances it was no longer interested in continuing its partnership in the joint venture. Similarly, NPC could have argued that due to delays caused by ICDC hesitations, and the resultant incompleteness of the project, it wanted to buy out the shares of the latter in the joint venture and continue on its own or with another partner.

The history of IJPC does confirm the assertion made earlier that the business plan of a joint venture must be drawn up and agreed upon by the partners before the signing of the joint venture agreement.

5.0- Conclusion

In this chapter it was argued that establishment of petrochemical joint ventures with Middle Eastern oil producing countries do not necessarily contribute to a stable supply of petroleum from these countries to Japan. If the latter is really concerned about her security of supply of this vital commodity, she must help to raise the overall economic development of these countries by providing technology, training, and easy term loans. By doing so, they will become less reliant on oil revenues for their development and will be more integrated in the world economy, and therefore, less likely to use oil supplies or prices as a weapon whenever a sellers' market appears.

It was also stated that Iran needs to formulate an appropriate industrial policy and concentrate on those industries or sectors of the economy in which she has a comparative advantage. Moreover, she needs to develop her infrastructure before embarking on any industrial project in the future.

The National Petrochemical Company also needs to modernise its organisation and either become an independent state owned company or become a regulatory

authority for the domestic petrochemical industry.

Finally, it was argued that companies seeking partners for a joint venture must carry out an extensive search to find the right partner who has similar business plans and strategy and one whose organisation and management style matches those of its own. It was stated that it is imperative to draw up a comprehensive business plan for the proposed joint venture before the legal agreement is signed, and cited the problems that IJPC partners faced when they ignored this crucial sequence.

EPILOGUE

As observed in this study, Iran Japan Petrochemical Company which started as a symbol of co-operation between Iran and Japan, a means of boosting the former's industrialisation efforts, and as a way of realising Japan's and Mitsui Bussan's dreams of having their own oil production, turned into a subject of intense argument between the two governments and a possible flash point.

However, the available information does not suggest that at any time the IJPC issue seriously threatened diplomatic and trade relations between the two countries. Quite the reverse, IJPC was an anchor which prevented both sides from taking short term and ill-tempered decisions regarding their mutual areas of interest.

This could be attributed to a large extent to the Japanese government's policy in the Middle East, particularly the Persian Gulf, the source of more than 70% of her oil supplies.

Iranians also exercised a great deal of far-sightedness when it came to dealing with issues related to IJPC. Indeed IJPC was the only foreign investment which was not nationalised after the revolution.

As a result of this attitude, Mitsui Bussan is still doing business in Iran. Other Japanese companies are also doing a brisk trade with the country, and Japan is now Iran's second biggest trading partner.

As discussed in Chapter Seven, after the separation, the Iranians renamed IJPC The Bandar Imam Petrochemical Company (BIPC), and are rebuilding it with the help of some European firms, hoping to complete it by 1994.

As for Mitsui Bussan, after nearly two decades of trouble and losses related to IJPC, it is fast rebuilding its business empire worldwide, and is determined to catch up

and surpass its arch rival, the Mitsubishi Trading Corporation as soon as possible.

Finally, in September 1990, almost one year after the dissolution of the joint venture, the Iranian newspapers reported that NIOC had discovered oil in Lorestan.¹³ This was the same area where Mitsui Bussan's affiliate, INEPCO, had failed to find any oil after nearly six years of exploration in the 1970s.

NOTES

1.The main reason for the Mitsubishi Groups's hesitation was, as in the case of Mitsui Bussan in Iran, the unfeasibility of the proposed joint venture with Saudi Arabia. However, as explained in Chapter Eight, contrary to the Mitsubishi argument, this joint venture which began operations in 1986 has turned out to be very successful.

2.Hamauzu, T., "Japan's Economic Relations with Iran: Trade and Private Direct Investments", Institute of Developing Economies, 1991, p.28.

3.Although the United States; due to the existence of huge indigenous oil reserves, is far less dependent upon imported oil than any other industrialised country, it nonetheless has, for two reasons, a major stake in the international oil industry. First, of the world's six largest oil companies, four are U.S based with implications for American economic interests worldwide and her tax revenues. Second, oil is a strategic commodity upon which most of the Western industrialised countries, including Japan, are dependent for their economic progress and survival. Consequently, the United States in her role as the protector of these countries and of the international capitalist (or free market) system against the now defunct Soviet threat or nationalism of resource rich developing countries, has assumed responsibility for ensuring the availability of plentiful oil supplies for herself and her allies. This can be attested to by the heavy involvement of the United States in the politics of the Middle East, and the U.S. Administration's intense efforts after the 1973 oil crisis in creating the International Energy Agency. The most recent example of the American strategic interest in the security of oil supplies is her massive and decisive involvement in the international efforts to reverse the Iraqi invasion of Kuwait which had great implications for the world petroleum industry.

This point, however, which is related to the political economy and geopolitical issues, is outside the scope of this study, and will not be discussed here.

4.The sharp rise in oil prices which followed the first oil crisis of 1973 brought to a halt the high economic growth period which had started in the early 1960s and pushed Japan into a deep recession which lasted three years. Moreover, it turned the surplus in foreign trade into a huge deficit. The second oil crisis of 1979 caused the same problems for Japan, but because of the lessons learned from the first one, she managed to cope better with the situation and recover from the recession much faster.

5.This action may bring the charges of transferring dirty and polluting industries to less developed countries. However, the fact is that these countries, considering their present state of

industrialisation, are unable to set up the less polluting high-tech and knowledge intensive industries. Therefore, they will have to start with the industries in which they have a comparative advantage, like processing. Moreover, Japan which is a leader in pollution control technologies, can help to reduce the environmental effect of such industries.

Furthermore, the concept of comparative advantage is a dynamic process. As the process of industrialisation gains momentum in the developing countries, they will gain new advantages and will be able to establish more high-tech and less polluting industries.

6. Iran was one of the first countries in the world which began using natural gas in urban transportation. After the revolution, these efforts were largely halted. However, recently the government has taken steps to expand the use of natural gas in vehicles, and is seeking the co-operation of Japanese companies to develop natural gas burning engines. (National Iranian Gas Company publications).

7. For a comprehensive discussion of the Japanese aid programme for the Middle East see M. Mizutani and Y. Fuwa, in Sugihara and Allan (1993) op cit, chapters 6 and 7.

8. NPC, "Iran's Petrochemical Complexes and Future Plans", Public Relations Office, National Petrochemical Company, Spring 1991. Two of these joint ventures were with Japanese (IJPC and IRNIP), and the rest mainly with American chemical and oil companies.

9. ENI is wholly owned by the Italian government, but the French government controls around 70% of the shares of CPF.

10. Financial Times, 25 March 1992.

11. This section draws from Richard H. Holton, "Making International Joint Ventures Work", in Otterbeck, L. (1981), pp. 255-267.

12. Misato (1981) op cit.

13. Iran Times (Washington DC), 21 September 1990.

Appendix A*

Financial Details of the Separation Agreement

The financial obligations of Iran Chemical Development Company and the National Petrochemical Company of Iran, the two partners in the Iran Japan Petrochemical Company under the Friendly Separation Agreement of 1989 were as follows:

1.0- The Financial Obligations of NPC

(1)- The Direct Loan: NPC would assume responsibility for the repayment of the principal and interest on the direct loan. The remaining principal of this loan was fixed at equivalent to 18,891,889,053 yen, and the interest rate was set at 7.75% until the end of its term.

(2)- the Yen Loan: NPC would undertake to reimburse the remainder of the principal and interest of the yen loan. The balance of this loan's principal was set at 21,120,000,000 yen as of 31/12/1988, with an interest rate of 4% for the rest of its term.

(3)- Suppliers' Credit: NPC would repay the remaining principal and interest of the suppliers' credit loan. The balance of the principal of this loan was 12,054,571,120 yen as of 31/12/1988 and the accumulated interest until that date was 2,743,818,544 yen. The interest rate until the full clearance of the loan was set at 6.7%.

(4)- The Iranian Loan*: NPC would relinquish all its claims regarding the remaining principal of and interest on the Iranian loan. The position of the loan as of 31/12/1988 was:

(a)- Remaining balance of the principal of the dollar loan: \$340,136,000.

(b)- Remaining balance of the principal of the rial loan: IR24,000,000,000.

(c)- Interest on the dollar loan: \$190,013,947.97.

(d)- Interest on the rial loan: IR13,407,386,301.

The interest on the loan would be set at 7.2% until the end of its term.

(*)- The Iranian loan was composed of two portions: a dollar loan and a rial loan. See next paragraph for details.

(5)- Sundry Creditors: NPC would clear the accounts of all sundry creditors on behalf of LJPC. The total balance of accounts with these creditors as of 31/12/1988 was IR2201.8 million.

(6)- NPC would forgo all claims to its short-term loans extended to LJPC until 31/12/1988. The aggregate balance of these loans as of that date was IR60,070,902,133.

2.0- The Financial Obligations of ICDC

(1)- ICDC Loan: ICDC would waive all its claims regarding the remaining principal and interest of the ICDC loan to LJPC for the benefit of the latter. The remaining principal and interest of the loan as of 31/12/1988 were 125,000,000,000 yen and 73,997,301,369 yen respectively. The interest rate would be set at 8.349% for the duration of the loan.

(2)- ICDC Payment: ICDC would pay NPC a fixed sum of 130,000,000,000 yen as its share for the reimbursement of the loans mentioned in Section 1.0 (NPC obligations). This amount is final and will not be altered under any circumstances, including currency fluctuations.

Table A.1 shows a summary of the financial obligations of NPC and ICDC under the terms of the Separation Agreement of November 1988.

3.0- Method of Settlement

NPC and ICDC agreed to appoint a bank as an intermediary for the settlement of all financial matters related to IJPC. ICDC would pay the 130 billion yen to an account at the same bank, and the latter would settle all outstanding claims assumed by NPC under the Separation Agreement. Any remaining balance, after the clearance of these claims will be forwarded to NPC. Moreover, the bank undertook to transfer all of ICDC shares in IJPC (50%) to NPC, and deliver the letters of resignation of all of the directors of IJPC appointed by ICDC.

ICDC agreed to transfer all of its 50% share in the Iran Japan petrochemical Company; equivalent to half of the uncompleted petrochemical complex in Iran, to NPC. A joint valuation survey carried out by the two partners in October 1988, put the value of the complex at nearly zero.

4.0- The Balance Sheet of IJPC at the Time of Dissolution

In the Separation Agreement, the loss (liabilities - assets) related to the investment of the two partners in the IJPC was estimated to be IR44,494,303,830, assuming that both would discharge their obligations. Accordingly, the Balance Sheet and the Profit & Loss Account of IJPC were adjusted for financial year 1988 (1 January to 31 December 1988) to take account of the loss (see Table A.2).

* Note: This appendix is based on data supplied by BIPC, March 1993.

Table A.1: A Summary of the Financial Obligations of the Two IJPC Partners Under the "Separation Agreement"

	NPC	NPC	ICDC	ICDC
Type of Loan	Millions of Rials	Millions of Yens	Millions of Rials	Millions of Yens
1-Direct Loan Principal Interest	5,623.3 2,722.1	18,891.9 2,772.1		
2-Yen Loan Principal Interest	6,183.3 1,570.6	21,120.0 2,870.0		
3-Suppliers' Credit Principal Interest	3,894.7 1,501.6	12,054.6 2,743.8		
4-Iranian Loan Principal \$ IR Interest \$ IR	23,976.4 24,000.0 13,075.6 13,407.4	\$340,1m -- \$190m		
5-Sundry Creditors	2,201.8	--		
6-Short-Term Loans (1)	60,070.9			
7-ICDC Loan Principal Interest			38,702.1 40,495.7	125,000 73,997.3
8-ICDC Payment (2)		130,000		130,000
Total	158,227.7	Y62,654.3 \$530m	79,197.8	328,997.3

Notes: (1)- NPC short-term loans to IJPC.

(2)- ICDC one-off payment to NPC under the Separation Agreement.

Source: BIPC, March 1993.

Table A.2: The Balance Sheet of Iran Japan Petrochemical Company as of 31 December 1988 (10/10/1367) (in rials)

Assets		1988	1987
Current Assets			
Cash	1,612,541,218		1,320,084,790
Contractors Current Accounts	329,522		4,863,249
Prepayments to Contractors	--		680,245,811
Sundry Debtors	5,429,011		35,184,215
Oil Companies ¹	553,555,910		--
Stocks	12,748,288		20,707,575
Prepayments	--		79,290
Sundry Deposits	277,201,871		268,676,381
Total of Current Assets		2,461,805,850	2,329,841,311
Fixed Assets			
Fixed Assets (at cost)	3,422,249,904		3,428,720,276
Less Deprecia- tion Reserves	2,964,049,083		2,819,406,336
Net Total of Fixed Assets		458,200,821	609,313,940
Project's Costs		1,570,706,126	256,058,209,233
Pre-Operation Expenses		--	108,028,114
Total of Assets		4,490,712,797	268,105,392,598

Table A.2: (continued)

Liabil-ities		1988	1987
Current Liabil-ities			
Contra- ctors Current Accounts	23,979,918		1,604,116,432
Contra- ctors Deposits	1,098,126,285		1,040,369,774
Sundry Credit-ors	1,240,401,559		3,457,193,940
Oil Compan-ies 1	2,014,840,734		56,239,680,596
Delayed Expenses Reserves	33,264,581		746,699,868
Short-Term Loans	--		58,063,402,133
Portion of Long-Term Loans Used	74,403,550		97,957,174,993
Total of Current Liabil-ities		4,485,016,627	219,108,637,736
Long-Term Loans			
Long-Term Loans 2	--		8,196,249,600
Unrealised Profit (Loss) 3	--		(3,699,494,738)

Long-Term Loans 4	--		4,496,754,862
Authorised Capital		60,000,000,000	60,000,000,000
Called-in Capital		46,500,000,000	46,500,000,000
Less Shareholders' Pledges		2,000,000,000	2,000,000,000
Paid-in-Capital		44,500,000,000	44,500,000,000
Losses Resulting From Invest-ment		(44,494,303,830)	
Net Shareholders' Worth		5,696,170	--
Total Liabilities		4,490,712,797	268,105,392,598

Note: 1- IJPC current accounts with Iranian oil and petrochemical companies.

2- The value of long-term loans in rials, calculated at the end of the year's rates of exchange.

3- The unrealised profit (loss) from fluctuations in the rates of exchange.

4- The value of long-term loans in rials, calculated at the rates of exchange at the time of issue.

Source: Accounts of IJPC at the end of Financial Year 1988.

BIBLIOGRAPHY

ABRAHAMIAN, Ervand, "Structural Causes of the Iranian Revolution", MERIP Reports, NO.87, May 1980.

-----, "Iran Between two Revolutions", Princeton University Press, 1982.

ADAMIYYAT, F., "Amir Kabir va Iran", Tehran, Payman, in Persian, 1945.

ADELMAN, M.A., "The World Petroleum Market", Johns Hopkins Press, Baltimore, 1971.

AFJEH'I, A.A., "Islamic Management", Tehran, Jahad-e-Daneshgahi, Autumn 1369 (1990). In Persian.

AITKIN, Hugh G.J., "American Capital and Canadian Resources", Harvard University Press, 1961.

AKAO, Nobutoshi(ed), "Japan's Economic Security:Resources as a Factor in Foreign Policy", published for the Royal Institute for International Affairs by Gower, 1983.

AKI, Koichi, "Japan's Energy Resources", Japan Quarterly, Vol 3.3, July 1956, pp.287-292.

ALIMARD, Amin, "Administrative Reform in Iran: The Gardner Contribution", Public Adminstration Quarterly, Vol.15, Issue 4, Winter 1992, pp.457-75.

AL-SOWAYEGH, Abdulaziz, "Arab Petropolitics", Croom Helm, 1984.

AMUZEGAR, J. and FEKRAT, A., "Iran: Economic Development Under Dualistic Conditions", University of Chicago Press, 1971.

ANDERSON Jr, I.H., "The Standard Vacuum Oil Company and the United States East asian Policy, 1933-1941", Princeton University Press, 1975.

ANTHONY, J.D (ed), "The Middle East: Oil, Politics, and Development", published by American Enterprise Institute for Public Policy Research, 1975.

ARAKI,MOTOAKI, "Trends in Japanese Direct Investment", Exim Review, 1984, vol 5.2.

ARDANT, H.W, "Professor Kojima on the Macroeconomics of Foreign Direct Investment", Hitotsubashi Journal of Economics, Vol.15.1, June 1974, pp.26-35.

ASHRAF, A., "Historical Obstacles in the Development of Capitalism in Iran: Qajar Period", Tehran, Zamineh, in Persian, 1980.

----- and BANUAZIZI, A., "Policies and Strategies of Land Reform in Iran", in INAYATULAH, B. (ed), "Asian Experience", Kualalampur, APDAC, 1980.

ASKARIAN, Mostafa, "Manpower Management", Tehran, Jihad-e-Daneshgahi, Autumn 1370 (1991). In Persian.

AZZAM, Dr Henry, "Arab Banking: Trade Shrinks, but Investment Potential Up", Asian Finance, 15 May 1987, vol 13 No 5, PP 80-82.

BANANI, A., "The Modernization of Iran: 1921-1941", Stanford University Press, 1961.

BAIN, J., "Barriers to New Competition", Harvard University Press, 1956.

BALDWIN, G.B., "Planning and Development in Iran", Baltimore, Johns Hopkins Press, 1967.

BALLON, Robert.J., "Japan's Investments Overseas", Ausnwirtschaft, Vol 28.3/4 September/December 1973, pp.128-153.

----- and EUGENE, H.LEE, "Foreign Investment and Japan", Sofia University, Tokyo, 1972.

BANDAR IMAM PETROCHEMICAL COMPANY (BIPC), "Report of the Board of Directors to BIPC Shareholders", Tehran, July 1992.

-----, "The Report of the Board of Directors Meeting", Tehran, File I.A.C., 15/7/1992.

BANK MARKAZI IRAN, "Annual Report", various issues.

BARRET, A. Charles, "Business Opportunities in Iran", Canadian Business Review, vol 17, iss. 3, Autumn 1990.

BARRETT, Brendan F.D. and THERIVEL, Riki, " Environmental Policy and Impact Assessment in Japan", Routledge, 1991.

BASHIRIYEH, H., "The State and Revolution in Iran: 1962-82", Croom Helm, 1984.

BERG, S.V. and FRIEDMAN, P., "Joint Ventures in American Industry", Part I, Mergers and Acquisitions, 1978.

BILL, James Alban, "The Politics in Iran: Groups, Classes and Modernization", Charles E. Merrill Publishing Co, 1972.

----- and LEIDEN, Carl, "Politics in the Middle East", Little, Brown & Co, 1984.

BIVENS, K.K. and LOVELL, E., "Joint Ventures with Foreign Partners", New York, National Industrial conference Board, 1966.

BHARIER, J., "Economic Development in Iran, 1900-1970", Oxford University Press, London, 1971.

BOGER, Karl, "Postwar Industrial Policy In Japan: An Annotated Bibliography", London, Scarecrow, 1988.

-----, "Japanese Direct Foreign Investments: An Annotated Bibliography", Greenwood Press, 1989.

BOULTON, A.H., "Business Consortia", Sweet & Maxwell, 1961.

BOYLE, S.E., "An Estimate of the Number and the Size Distribution of Domestic Joint Subsidiaries", *Antitrust Law and Economic Review*, Vol 1, 1968, pp.81-92.

BRASH, D.T., "American Investment in Australian Industry", Australian National University Press, 1966.

BREZEZINSKI, Zbigniew, "The Fragile Blossom: Crisis and Change in Japan", Harper & Row, 1972.

BROWN, M.S., "The Emergence of Japanese Interests in the World Oil Market", Harvard Center for International Affairs, Program on U.S.-Japan Relations, Occasional Paper 83-1, Cambridge, 1983.

BUCKLEY, Peter J, "Macroeconomic Versus International Business Approach to Direct Foreign Investment: A Comment on Professor Kojima's Interpretation", *Hitotsubashi Journal of Economics*, Vol 24.1, June 1983.

-----, "The Economic Analysis of the Multinational Enterprise: Reading Versus Japan", *Hitotsubashi Journal of Economics*, Vol 26, December 1985, pp.117-124.

BURRIDGE, J.M., "Pressure Deflated: Japan and the 1973 Arab Oil Embargo", Phd Dissertation, The George Washington University, 1988.

BUSINESS ASIA, "Surge in Investment Spurs Japanese Firms in Key Overseas Markets", 1985, vol 17.41, 11 Oct.

BUSINESS INTERNATIONAL, "Iran Attracts and Frustrates International Firms", May 3, 1974.

CADWELL, M., "Petroleum Politics in the Japanese State and Industry in a Changing Policy Context", PhD Dissertation, University of Wisconsin, Madison, 1981.

CAMPBELL, W.R., 'Japan and the Middle East' in OZAKE, W.R and ARNOLD, W., "Japan's Foreign Relations: A Global Search for Economic Security", Boulder and London, Westview Press, 1985.

CAVES, R.E., "International Corporations: The Industrial Economics of Foreign Investment", *Economica*, 1971.

-----, "Multinational Firms, Competition, and Productivity in Host-Country Markets", *Economica*, 1974.

-----, "Causes of Direct Investment: Foreign Firms' Shares in Canadian and U.K. Manufacturing Industries", *Review of Economics and Statistics*, pp.279-93, 1974.

CENTRAL STATISTICAL OFFICE, "National Annual Statistics of Iran", various issues.

CHAPMAN, J.W.M; DRIFTE, R.; and GOW, I.T.M., "Japan's Quest for Comprehensive Security: Defence Diplomacy and Dependence", Frances Pinter (Publishers), London, 1983.

CHEMICAL WEEK, "Japan Looks Abroad for Growth", 1981, vol 129.15, Oct 7.

CLARK, G., "An Analysis of Japanese Direct Investment Overseas in Postwar Years", *The Developing Economies*, Vol IV-I, March 1971, pp.58-64.

COHEN, B.I., "Multinational Firms and Asian Exports", Yale University Press, 1975.

COHEN, J.B., "Japan's Economy in War and Reconstruction", University of Minnesota Press, 1949.

C.T.C. REPORTER, "Policy Analysis and Research: Changes in the Pattern of FDI; Un Update", No.23, Spring 1987.

DANESH-E-MODEERIAT (MANAGEMENT SCIENCE), Tehran, Faculty of Management, University of Tehran, Quarterly, Numbers 2-7, Autumn 1988 to Winter 1990. In Persian.

DROLLAS, L. and GREENMAN, J., "Oil: the Devil's Gold", Duckworth & Co. Ltd, 1989.

DUNNING, J.H., "American Investment in British Manufacturing Industry", Oxford University Press, 1956.

EDSTROM, A. and HOGBERG, B., "The Strategic Context of Interfirm Cooperation", Brussels, European Institute of Advanced Studies in Management, 1977.

EDSTROM, J.H., HOGBERG B. and NORBACK, L.E., "The Use of Cooperative Strategies by Swedish manufacturing Firms", Institute of International Business at the Stockholm School of Economics, Research Paper Series 79/2, 1979.

EGUCHI, Yujiro, "Japanese Energy Policy", *International Affairs*, Vol.56, Pt. 2, 1980.

EIU REPORT, "Petroleum Studies; Part B - The economic Impact of the Oil Industry", Vol I, Introduction, The Economist Intelligence Unit Ltd, 29.8.1968.

ELI, Max, "Japan Inc: Global Strategies of Japanese Trading Corporations", McGraw-Hill Book Company, 1990.

FAR EASTERN ECONOMIC REVIEW, "Japan makes an Ideal Marriage", Far Eastern Economic Review, June 16, 1978.

FARMANFARMAYAN, H., "The forces of Modernization in Nineteenth-Century Iran: A Historical Survey", in POLK, W.R. and CHAMBERS, R.L. (eds), "The Beginnings of Modernization in the Middle East: the 19th Century", University of Chicago Press, 1968.

FATEMI, N.S., "A diplomatic History of Persia", New York, Whitter Books, 1952.

FAYAD, M. and MOTAMEN, H., "The Economics of the Petrochemical Industry", Frances Pinter, 1986.

FESHARAKI, Fereidun, "The Development of the Iranian Oil Industry, 1901-1971", PhD Dissertation, University of Surrey, March 1974.

FESHARAKI, Fereidun, "Development of Iranian Oil Industry, International and Domestic Aspects", Praeger, 1976.

FORD, A.W., "The Anglo-Iranian Dispute of 1951-52", Berkeley, University of California Press, 1954.

FRANKO, L.G., "Joint Venture Survival in Multinational Corporations", New York, Praeger, 1971.

-----, 'The Art of Choosing an American Joint Venture Partner' in BROOKS and REMMERS (eds), "The Multinational Company in Europe - Some Key Problems", Praeger Publishers, 1972.

GELB, A., "Oil Windfalls: Blessing or Curse?", Washington, The World Bank, 1988.

GHASSEMZADEH, M., "An Analytical comparison of 1933 and 1954 Agreements", Tehran, 1968, (in Persian).

GHERTMAN, M. and ALLEN, M., "An Introduction to Multinationals", MacMillan Press, 1985.

GHOSHEH, Baher A., "A New International Economic Role for the Arab World: Lessons from the Japanese Experience", PhD Dissertation, State University of New York at Buffalo, 1988.

GOSH, D. & MIZUNO, Y., "Influence of Imported Raw Materials Prices on Japanese Export Prices; In A Fixed Price/Flex Price Approach", Stirling University, 1991.

GOW, I.T.M., "Japanese Style Management and the Issues of Transferability", The Centre for Japanese Studies, University of Stirling, 1987.

GRESSER, J. and FUJIKURA, Morishima A., "Environmental Law in Japan", MIT Press, 1981.

GRUBER, W.; MEHTA, D.; and VERNON, R., "The R & D Factor in International Trade and Investment of U.S. Industries", Journal of Political Economy, Vol 75, 1967, pp.20-37.

HALLIDAY, F., "Iran: Dictatorship and Development", Penguin, 1979.

-----, "The Genesis of the Iranian Revolution", Third World Quarterly, October 1979.

HAMAUZU, Tetsuo, "Japan's Trade With the Gulf States", Arab Affairs, 1990.

-----, "The Rise and Fall of Gulf Oil in the Japanese Market: With Special Reference to Iranian Crude", Institute of Developing Economies, 1991.

-----, "Japan's Economic Relations with Iran: Trade and Direct Private Investment", Institute of Developing Economies, 1991.

HANDY, C.; COLIN, G.; GOW, I.T.M. and RANDLESON, C., "Making Managers", Pitman Publishing, 1988.

HAWLEY, A., "Human Ecology", New York, Ronald Press, 1950.

HEIN, Laura E., "Fuelling Growth: The Energy Revolution and Economic Policy in Post-War Japan", Harvard University Press, 1990.

HERSHLAG, Z.Y., "Introduction to the Modern Economic History of the Middle East", E.J. Brill, 1964.

HERZFELD, E., "Joint Ventures", Jordan & Sons Ltd, 1983.

HICKS, J., "The Future of Industrialism", International Affairs, Vol 50, April 1974.

HIRSCHMEIER, J. and YUI, T., "The Development of Japanese Business: 1600-1980", George Allen and Unwin Ltd, Second Edition, 1981.

HORST, T., "The Theory of Multinational Firm", Journal of Political Economy, Vol 70, 1971, pp.1959-70.

HUREWITZ, J.C., "Diplomacy in the Near and Middle East: A Documentary Record, 1914-1956", Princeton University Press, 1956.

HUREWITZ, J.C (ed), "Oil, the Arab-Israeli Dispute, and the Industrial World: Horizons of Crisis", Westview Press, Boulder, Colorado, 1976.

HYMER, Stephen, "The International Operations of national Firms: A Study of Direct Foreign Investment", The MIT Press, 1976.

INOKUCHI, Tosuke, "*Gendai Nihon Sangyo Hattatsushi, II, Sekiyu* (The History of Modern Japanese Industrial Development, Vol.2: Oil)", Tokyo: Gendai Nihon sangyo Hattatsushi Kenkyukai, 1963.

IRAN JAPAN PETROCHEMICAL COMPANY, "The Article of Association of the Iran Japan Petrochemical Company", 6/4/1973.

-----, "Main Budget Account, 1976", Project I.A.K., 1976.

-----, "Records of the Extraordinary General Meeting", 2/8/1975.

-----, "Records of the Board of Directors' Meeting", 31/8/1976.

-----, "Project Status Report", Tehran, IJPC, 19 December 1980.

ISHIKAWA, Kazuo and OSHIBA, Ryo, "Contemporary Japanese International Studies", Japan Forum.

ISSAWI, C., "The Decline of Middle Eastern Trade", in RICHARDS, D.S., 1970.

-----, "The Economic History of Iran: 1800-1914", University of Chicago Press, 1971.

JAPAN CHEMICAL WEEK, "JCW Special Report: Iranian Petrochemical Project", Vol 19, No.958, August 31, 1978.

JAPAN ECONOMIC JOURNAL, various issues from 1981-1989.

JAPAN FOUNDATION, "Dialogue: Middle East and Japan", The International Symposium: Cultural Base of Mutual Understanding between the Middle East and Japan, March 30-April 18, 1977.

-----, "The Islamic World and Japan: In Pursuit of Mutual Understanding", Proceedings of International Symposium: Islamic Civilisation and Japan, March 21 to 29, 1980.

JAPAN PETROLEUM & ENERGY TRENDS, published by JAPEC (Japan Petroleum & Energy Consultants Ltd), all issues since March 1991.

JAPAN STATISTICAL YEARBOOK, various issues.

JAPAN TIMES (The), "Iran Lays the Foundation for Reconstruction", Sunday, February 11, 1990.

DIGEST OF JAPANESE INDUSTRY AND TECHNOLOGY, "Economic Relations Between Japan and the Middle East", Japan Trade & Industry Publicity Inc., No. 234, 1987.

JETRO, "Foreign Trade of Japan", Tokyo, 1971.

-----, "White Paper on International Trade", Japan 1988.

-----, "JETRO White Paper on World Direct Investments: New Phase in Foreign Direct Investments and Strategic Alliances", Special Report, JETRO, 1989.

JIME REVIEW "A Review of Middle East and Energy Affairs", Japan Institute for Middle Eastern Economies (JIME), Quarterly, all issues since spring 1990.

JNCWPC, "Petroleum Industry in Japan/1990", published by The Japanese National Committee for World Petroleum Congresses, 1991.

JOHNSON, Chalmer, "Japan's Public Policy Companies", American Enterprises Institute, Washington, D.C., 1978.

-----, "MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975", Stanford University Press, 1982.

KADOURIE, E. and HAIM, S.G., "Towards a Modern Iran", Frank Cass, 1980.

KAGONO, Tadao, *et al*, "Strategic vs Evolutionary Management; A U.S.-Japan Comparison of Strategy and Organisation", Elsevier Publishers B.V., Amsterdam, 1985.

KARSHENAS, Massoud, "Oil, State and Industrialization in Iran", Cambridge University Press, 1990.

KATAYAMA, Osamu, "Standing Their Grounds; Company Strategies: Arabian Oil Company", Look Japan, November 1991.

KATOUZIAN, H., "The Political Economy of Modern Iran, Despotism and Pseudo-Modernism, 1926-1979", Macmillan, 1981.

-----, "The Political Economy of Oil Exporting Countries", *Peuples Mediteraneens/Mediterranean Peoples*, September 1979, pp.3-22.

KAUFMAN, E and ABED and IKEDA, "Intifada and Peace Process: Prospect for the Political Stabilization in Middle East", Joint Research Programme, Series No 74, Institute of Developing Economies.

KAZEMI, F., "The Military and Politics in Iran: The Uneasy Symbiosis", in KADOURIE and HAIM, S.G., 1980.

KAZEMZADEH, F., "Russia and Britain in Persia 1868-1914, A Study in Imperialism", Yale University Press, 1968.

KEDDIE, Nikki R., "Roots of Revolution: An Interpretive History of Modern Iran", Yale University Press, 1981.

KENT, Marian, "Oil and Empire: British Diplomacy and Mesopotamian Oil 1900-1920", London, 1976.

Key Indicators, "A Report on Iran, Iraq, Kuwait, Qatar, Saudi Arabia, U.A.E.", 1988/89.

KINDLEBERGER, C.P., "American Business Abroad: Six Lectures on Direct Investment", Yale University Press, 1969.

KHOMEINI, Ruhallah (Ayatollah), "Tahrir-Al-Vasileh)", Tehran, Vols. I & II. In Persian.

KLEINWORT BENSON International Inc., "Japanese Industry after the War", Kleinwort Benson Ltd, Feb 1991.

KOJIMA, Kiyoshi, "Reorganisation of North-South trade: Japan's Foreign Economic Policy for the 1970s", Hitotsubashi Journal of Economics, Vol.14, February 1973.

-----, "A Macroeconomic Approach to Foreign Direct Investment", Hitotsubashi Journal of Economics, Vol.14, June 1973.

-----, "Japan and New World Economic Order", Croom Helm Ltd, 1977.

-----, "Transfer of Technology to Developing Countries: Japanese Type versus American Type", Hitotsubashi Journal of Economics, Vol.17, No.2, February 1977.

-----, "*Nihon Noshigeu Hosho to Kaigai Tosho* (Natural Resource Guarantees for Japan and Japan's Overseas Investments)", Sekai Keizai Hoyron, April 1977.

-----, "Direct Foreign Investment Between Advanced Industrialized Countries", Hitotsubashi Journal of Economics, June 1977.

-----, "Japanese Direct Foreign Investment: A Model of Multinational Business Operations", Charles E. Tuttle Co, 1978.

-----, "Japanese Direct Foreign Investment: A Model of Multinational Business Operations", Charles E. Tuttle Co., 1978.

-----, "Direct Foreign Investment in Developing Countries: The Issue of Over-presence", Hitotsubashi Journal of Economics, Vol.19, Dec 1978.

-----, "Macroeconomic Versus International Business Approach to Direct Foreign Investment", Hitotsubashi Journal of Economics, June 1982.

-----, "Japanese and American Direct Investment in Asian: A Comparative Analysis", Hitotsubashi Journal of Economics, Vol.26, June 1985.

-----, "The Allocation of Japanese Direct Foreign Investment and it's Evolution in Asia", Hitotsubashi Journal of Economics, Vol.26, December 1985.

-----, "Japanese Style Direct Foreign Investment", Japanese Economic Studies, Vol 14, Spring 1988.

-----, "A Competitive Bipolar Key Currency System", Hitotsubashi Journal of Economics, June 1976.

----- and OZAWA, Terutomo, "Micro- and Macro-Economic Models of Direct Foreign Investment: Towards a Synthesis", Hitotsubashi Journal of Economics, Vol.25, No.1, June 1984.

----- and OZAWA, T., "Japan General Trading Companies: Merchants of Economic Development", Paris, OECD, 1984.

KOLDE, E.J., "International Business Enterprise", Prentice-Hall Inc., 1968.

KOMIYA, Ryutaro, "Industrial Policy of Japan", Academic Press, Japan Inc., 1988.

KOUTSOYIANNIS, A., "Managerial Job Security and the Capital Structure of Firms", Manchester School, 1978.

KRAUSE, L.B. and DAM, K.W., "Federal Tax Treatment of Foreign Income", Brookings Institute, 1964.

LAMBTON, A.K.S., "Landlord and Peasant in Persia: A Study of Land Tenure and land Revenue Administration", London, Oxford University Press, 1953.

-----, "Persian Trade Under the Early Qajar", in RICHARDS, D.S. (ed), 1970.

LANG, David C.K., "Japan's Middle East Diplomacy", Asian Profile, Vol.13, No 4, August 1985.

LEE, Chung H., "United States and Japanese Direct Investment in Korea: A Comparative Study", Hitotsubashi Journal of Economics, Vol.20-2, February 1980, pp.26-41.

-----, "On Japanese Macroeconomic Theories of Direct Foreign Investment", Economic Development and Cultural Exchange, University of Chicago, Vol.324, July 1984, pp.713-723.

LEIBENSTIEN, H., "Allocative Efficiency vs X-Efficiency", American Economic Review, 1966.

LONGRIGG, S.H., "Oil in the Middle East: Its discovery and Development, Royal Institute of International Affairs, London, 1954.

LOONEY, Robert E., "Economic Origins of the Iranian Revolution", Lexington Books, 1982.

LORENZE, J.H., "Iran's Great Reformers of the Nineteenth Century: An Analysis of Amir Kabir's Reforms", Boston, Iranian Studies, Spring-Summer, 1971.

MAJLIS (the Iranian Parliament), "The Supplementary Act for the Amendment of the 1964-65 Budget", Tehran, 26/7/1964.

-----, "The Petrochemical Industries Development Act", Tehran, 15/7/1964.

MAHAR, M., "Resourceful Aggressor: A Portrait of Saddam Hussein and Iraq's Economy", Barron's, Vol 70, iss. 33, 1990.

MASON, R. Hal, "A Comment on Professor Kojima's 'Japanese Type Versus American Type of Technology Transfers'", Hitotsubashi Journal of Economics, Vol 20-2, February 1980, pp.42-52.

MATSUTANI, Toshio, "An Analysis of Japan's Policies and Processes for Development of its Manufacturing Industry Portfolio", PhD Dissertation, State University of New York at Buffalo, 1985.

McDONALD, P., "Deregulation of the Japanese Oil Industry: Energy Security Issues for the 1990s", Financial Times Business Information Ltd, 1992.

METRA CONSULTING, "Handbook of National Development Plans", Graham & Trotman, 1983.

MEDZINI, Mehron, "Japan and the Middle East", New Middle East Journal of the Israel Oriental Society, Jerusalem, Vol.22, No.1, 1972, pp.26-39. In Hebrew

-----, "Japan and the Middle East", New Middle East Journal of the Israel Oriental Society, Jerusalem, Vol.22, No.3, 1972, pp.381-87. In Hebrew

MIDDLE EAST ECONOMIC DIGEST (MEED), various issues.

-----, "Japan and the Middle East", MEED Special Report, October 1977.

-----, "Special Report", November 1986.

-----, "Petrochemicals: Planning for the New Generation", MEED, 16 September 1988.

MIKDASHI, Z., "A Financial Analysis of Middle Eastern Oil Concessions, 1901-1965", Praeger Publishers, 1966.

MINISTRY OF TRADE (Iran), "Iran and Japan", a Research Publication by the Trade Research and Studies Institute, Ministry of Trade, Tehran, 1986. In Persian.

MIRSEPASSI, Nasser, "Managing Human Resources & Labour Relations (A System Approach)", Tehran, Naghsh-e-Jahan, Eleventh Edition, 1371 (1992). In Persian.

MIRZA, H.; BUCKLEY, P.J. and SPARKES, J.R., "New Multinationals for Old? The Political Economy of Japanese Internationalisation", Japan Forum, Vol.2, No.2, November 1990.

MISATO, Yasunobu, "The Iran Petrochemical Project: The Suffering of Mitsui Bussan", Nihon Keizai Shinbun, Tokyo, 1981.

MISHIMA, Yasuo, "The Mitsubishi: It's Challenge and Strategy", JAI Press Inc, 1989.

MITI, "Background Information: Economic Cooperation of Japan", 1981.

-----, "Background Information: White Paper on International Trade", 1983.

-----, "Japan's Foreign Direct Investment in FY 1988, Foreign Direct Investment in Japan in FY 1988", News From MITI, Overseas Public Affairs Office, 1989.

MITSUBISHI SHOJI, "*Mitsubishi Shoji Shashi* (A History of Mitsubishi Trading Company)", vol 1, Tokyo, 1986.

MITSUMI & Co., "*Nihon Keizai ni Okero Shosha no Yakumari: Genjo to Tenbo* (The role of Trading Companies in the Japanese Economy: Current State and Future Prospects)", Tokyo, Mitsui & Co. Ltd, 1976.

-----, "The 100 Year History of Mitsui & Co. Ltd: 1876-1976", Tokyo, Mitsui & Co. Ltd, 1977.

-----, "The Activities and Functions of Japanese Trading Firms", Corporate Research Department, Information and Research Division, Mitsui & Co. Ltd, (undated).

MITSUMI TRADE NEWS, "IJPC Joint Venture to be Dissolved", and Mitsui Mideast Increases Capital Ninefold", Nov/Dec 1989.

MIYAZAKI, Giichi, "*Sengo Nihon no Keizai Kiko* (Economic Organisations in Postwar Japan)", Tokyo, Shinhyoron, 1966.

MOFID, K., "Development Planning in Iran", Cambridgeshire, MENAS Press, 1988.

MOGHADDAM, G.R., "Iran's foreign trade Policy and Economic Development in the Inter-War Period", PhD Thesis, Stanford University, 1956.

MONROE, Elizabeth, "Britain's Movement in the Middle East, 1914-1956", London, 1963.

MORIMOTO, Abu Bakr, "Islam in Japan: It's Past, Present & Future", Islamic Centre Japan, 1980.

MORSE, RONALD A (ed), "*Japan and the Middle East in Alliance Politics*", Asia Program/International Security Studies Program, The Wilson Centre, 1986.

MOSTOFI, Baqer and McLACHLAN, Keith (eds), "The Development of the Iranian Oil Industry 1954-1973", Society for Contemporary Iranian Studies, School of Oriental and African Studies, 1991.

NARIYA, H., "The Present Status and the future prospects of the Petrochemical Industries", JIME Review, No.11, Winter 1991.

NATIONAL PETROCHEMICAL COMPANY (Iran), "The Constitution of the Supreme Council of the Petrochemical Industries", Tehran, Council of Ministers, 24/12/1963. In Persian.

-----, "The Article of Association of the National Petrochemical Industry", Tehran, Council of Ministers, 3/8/1966. In Persian

-----, "National Petrochemical Company Report to the Supreme Council of the Petrochemical Industries", Tehran, NPC, Number 1/2526, 1/1/1968. In Persian.

-----, "The Basic Agreement between the National Petrochemical Company of Iran and Mitsui & Co.), Tehran, 19 October 1971.

-----, "Iran's Petrochemical Complexes and Future Plans", Public Relations Office, National Petrochemical Company, Spring 1991.

NEMAZEE, M. and NAKAZIAN, S., "Iran Presents Her Case for Nationalisation", Oil Forum, 1954.

NESTER, William R., "Japan's Growing Power over east Asia and the World Economy", MacMillan, 1990.

NICHOLSON, Mark, "Iranian Oil Monopoly Faces Break-up", Financial Times, 23 March 1992.

NORSE, P. and TURNER, T. (eds), "Oil and Class Struggle", Zed Books, 1980.

ODELL, Peter R., "Oil and World Power", Penguin Books, Eight Edition, 1987.

OLSON, R.T., "The Mazandaran Development Project and Haji Mohammad Hassan: A Study in Persian Entrepreneurship, 1884-1898", in KEDOURIE, E. and HAIM, S.G. (eds), 1980.

OMAN, Charles, "New Forms of International Investment in Developing Countries", Paris, OECD, 1984.

-----, "New Forms of Investment in Developing Country Industries: Mining, Petrochemicals, Automobiles, Textiles, Food", Paris, OECD, 1989.

OPEC, "The Proceedings of the OPEC Seminar Held in Vienna, Austria, October 1979", Public Information Department of OPEC.

ORIENTAL ECONOMIST, "Whither Japan's Business Ventures in Iran", Vol 48.834, April 1980.

-----, "Japanese Overseas Investments", Vol 48.839, September 1980.

-----, "Japanese Overseas Investments", Vol 48.840, October 1980.

OSTROM, Douglas Ray, "Postwar Japanese Industrial Policy and Changes in Industrial Structure", PhD Dissertation, University of Michigan, 1984.

OTTERBECK, Lars, "The Management of Headquarters-Subsidiary Relationship in Multinational Corporations", Gower, London, 1981.

OZAWA, Terutomo., "Japan's Mid-East Economic Diplomacy", Columbia Journal of World Business, Vol 9.3, Fall 1974.

-----, "Multinationalism, Japanese Style: The Political Economy of Outward Dependency", Princeton University Press, 1979.

-----, "Recycling Japan's Surpluses for Developing Countries", Paris, OECD, 1989.

PAYAM, various articles on Japan, UNESCO, Farvardin 1368, (in Persian).

PETROLEUM INTELLIGENCE WEEKLY, "What's News Around the World: Iran Petrochemical Project", Petroleum Intelligence Weekly, September 6, 1976.

PFEFFER, J. and NOWAK, P., "Joint Ventures and Interorganizational Interdependence", Administrative Science Quarterly, Vol.21, September 1976.

-----, "Patterns of Joint Venture Activity: Implications for Antitrust Policy", Antitrust Bulletin, Vol.21, 1976.

RAMSTER, Eric D., "The Impacts of Direct Foreign Investment on Host Country Trade", Michigan University (Thesis), 1987.

RAZAVI, H. and VAKIL, F., "The Political Environment of Political Planning in Iran, 1971-1983: From Monarchy to Islamic Republic", Westview, 1984.

RICHARDS, D.S. (ed), "Islam and the Trade of Asia: A Colloquium", University of Pennsylvania Press, 1970.

Richardson, J.D., "On 'Going Abroad': The Firms Initial Foreign Investment Decision", Quarterly Review of Economic and Business.

ROBERTS, John J., "Mitsui: Three Centuries of Japanese Business", Wheatherhill, Tokyo, 1973.

ROTH, Martin, "The Japanese Oil Refiners: Turning the Corner", Kleinworth Benson International Inc., 13th July 1990.

ROULAC, S.E., "Structuring the Joint Venture", Mergers and Acquisitions, Spring 1980.

ROY, P.N., "International Trade: Theory and Practice", Wiley Eastern Ltd, 1986.

SADR, Muhammad Baqer (Ayatollah), "Our Economy", Tehran, Islamic Publications, translated by A. Espahbodi. In Persian.

SAIKAL, A., "The Rise and the Fall of the Shah", Princeton University Press, 1980.

SAMUELS, Richard J., "The Business of the Japanese State: Energy Markets in Comparative and Historical Perspective", Cornell University Press, 1987.

SARKAR, Nihar K., "Foreign Investment and Economic Development in Asia", Orient Longman Ltd, 1976.

SCALAPINO, Robert A., "The Foreign Policy of Modern Japan", University of California Press, London, 1977.

SCHUMPETER, E.B. (ed), "The Industrialisation of Japan and Manchukuo, 1930-40", New York, 1940.

SEGAL, Gerald, "Japan and the New International Relations", Japan Forum, Vol.2, No.1, April 1990.

SHIMIZU, Manabu, "Japan's Middle East Policy", Japan Quarterly, Oct-Dec 1988.

SHIMIZU, Hiroshi, "Introduction to Japan's Economic and Political Relations with the Middle East in the Inter-War Period, with an Annotated Bibliography of the Japanese Foreign Office Archives at the Diplomatic Record Office, Tokyo", Department of Japanese Studies, National University of Singapore, 1985.

-----, "Anglo-Japanese Trade Rivalry in the Middle East in the Inter-War Period", published for the Middle East Centre, St Anthony's College, Oxford, by Ithaca Press London, 1986.

SHOVEN, John B., "Government Policy Towards Industry in the United States and Japan", Cambridge University Press, Cambridge, 1988.

SIMARSKI, Lynn Teo, "Japan and the Middle East: Doing Business is Not Enough", The Middle East, July 1990.

SMITH, Thomas C., "Political Change and Industrial Development in Japan: Government Enterprise, 1868-1880", Stanford University Press, 1968.

SOAS, "The Japanese Approach to the Contemporary Middle East", papers presented at a Conference held in London at the School of Oriental and African Studies, The Japan Research Centre and the Centre of Near and Middle Eastern Studies, 1990.

SOLO, Robert, "The capacity to Assimilate an Advanced Technology", *The American Economic Review*, Vol.56, No.2, May 1966, pp.91-97.

STEEG, Helga, "Oil and War:How One Might Affect the Other", *The German Tribune*, No 1452, 20 January 1991.

STOCKING, G.W., "Middle East Oil", Penguin Books, 1971.

STOPFORD, J. and WELLS, L.T., "Managing the Multinational Enterprise: Organisation of the Firm and Ownership of the Subsidiaries", New York, Basic Books, 1972.

STUTELY, Richard, "Arab Banking: Gulf Reforms Aim at Economic Simulation", *Asian Finance*, 15 May 1987, Vol.13, No 5, pp.78-79.

SUGIHARA, Kaoru and ALLAN, J.A. (eds), "Japan in the Contemporary Middle East, Routledge, 1993.

TAGHAVI DAMGANI, S.R., "*Negaraeshi bar Modeeriat-e-Islami* (A Look at Islamic Management)", Tehran, Islamic Propaganda Organisation, Autumn 1371 (1992). In Persian.

TAKAHASHI, Kazuo, "A Complex Issue: The Iran-Japan Petrochemical Project", paper presented at the Conference on the Japanese Approach to the Contemporary Middle East, School of Oriental and African Studies, London, 4-5 October 1990.

TAKAMIYA, S. and THURLEY, K. (eds), "Japanese Emerging Multinationals", University of Tokyo Press, 1985.

TAKEUCHI, Kenji, "Japan's Experience in Linking Foreign Direct Investment & Imports of Minerals", *Resources Policy*, Dec 1990.

TONEDACHI, Masahisa, "Japan's lagging Oil Development", *Japan Quarterly*, Vol 29.1, January-March 1982, pp.97-104.

TSURUMI, Yoshi, "The Japanese Are Coming: A Multinational Interaction of Firms and Politics", Ballinger Publishing Co., 1976.

-----, "Multinational Management: Business Strategy and Government Policy", Ballinger Publishing Company, 1977.

TUCKER, Robert W., "Oil: The Issue of American Intervention", *Commentary*, Vol.15, No. 1, January 1975.

TURNER, Louis, "Multinational Companies and the Third World", Hill and Wang, New York, 1973.

-----, "Oil Companies in the International Systems", published for RIIA by George Allen & Unwin.

-----, "European and Japanese Energy Policies", Current History, Vol.74, 1978.

----- and BEDORE, James, "The Trade Politics of Middle Eastern Industrialization", Foreign Affairs, Vol.52.2, Winter 1978/79.

-----, "Middle East Industrialisation: A Study of Saudi and Iranian Downstream Investments", Royal Institute of International Affairs, London, 1979.

TWITCHELL, K.S., "Saudi Arabia", Princeton University Press, 1953.

UNITED NATIONS, International Labour Office, "Labour Conditions in the Oil Industry in Iran", Geneva, United Nations, 1950.

-----, Public Finance Information Papers, "Iran, ST/ECA/SER.A/14", New York, United Nations, 1951.

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION (hereafter UNIDO), "First World-wide Study on the Petrochemical Industry: 1975-2000", UNIDO, Vienna, UNIDO/ICIS. 83, December 1978.

-----, "First Draft of UNIDO Model Form of Agreement for the Licensing of Patents and Know-how in the Petrochemical Industry", UNIDO, Turkey, ID/WG. 336/1, February 1981.

-----, "Long-term Arrangements for the Development of the Petrochemical Industry in developing Countries Including Arrangements for Marketing Petrochemicals Produced in Developing Countries, UNIDO, Turkey, ID/WG. 336/2, March 1981.

-----, "Second Worldwide Study on the Petrochemical Industry: Process of Restructuring", UNIDO, Turkey, ID/WG. 336/3, May 1981.

-----, "Second Consultation on the Petrochemical Industry", UNIDO, Turkey, Report, June 1981.

VERNON, Raymond., "International Investment and International Trade in the Product Cycle", Quarterly Journal of Economics, Vol 80, 1965, pp.190-207.

-----, "Sovereignty at Bay: The Multinational Spread of U.S. Enterprises", Basic Books, 1971.

----- (ed), "The Oil Crisis", W.W. Norton & Co., 1976.

WAKABAYASHI, H., 'Kaikyo Sekai to Nihon (The Islamic World and Japan)', Tokyo, 1938.

WILBER, Donald N., "The Resurrection and Reconstruction of Iran", New York, 1975.

WILSON, Rodney J.A., "Japan's Exports to the Middle East: Directional and Commodity Trends and Price Behaviour", *The Middle East Journal*, Vol.38, No.3, Summer 1984.

WOODWARD, E.L. and BUTLER, R. (eds), "Documents on British Foreign Policy, 1919-1939", First Series, Vol.IV, London Foreign Office, 1952.

YAGANEKI, E.B., "Recent Financial and Monetary History of Persia", Columbia University Press, 1934.

YAMADA, Mitsuhiro, "A Study of Divestitures by Japanese Corporations in Foreign Countries", *Japanese Economic Studies*, Vol 14, Spring 1986.

YONEKAWA, Shin'ichi, "General Trading Companies: A Comparative and Historical Study", United Nations University Press, 1990.

YORK, Valerie, "The Gulf in the 1980's", Royal Institute of International Affairs, Chatham House Papers, London 1980.

YOSHINO, Michael, "Japanese Multinational Enterprises", Harvard University Press, 1976.

YOSHITSU, Michael M., "Iran and Afghanistan in Japanese Perspective", *Asian Survey*, May 1981.

-----, "Caught in the Middle East: Japan's Diplomacy in Transition", D.C. Heath and Company, Lexington, 1984.

YOUNG, Alexander K., "The *Sogo Shosha*: Japan's Multinational Trading Companies", Tokyo, Charles E. Tuttle Company Inc., 1979.

YOUNG, G.R. and BRADFORD, S. Jr, "Joint Ventures: Planning and Action", Financial Executives Research Foundation, New York, 1977.

YOUNGQUIST, Walter, "Investing in Natural Resources", Second Edition, Dow Jones-Irwin, 1980.

YUAN, Li Wu, "Japan's Search for Oil: A Case Study on Economic Nationalism and International Security", Hoover Institution Press, Stanford University, Stanford, California, 1977.